



Control and Remote Control Software

CCRS 1000
V.43

for head-end station system CSE 3300




Art. Nr. 325182















GB













Operating Instructions




TRIAX - your ultimate connection

1	Software License Agreement	5
1.0	Software License Agreement	5
1.1	Definitions	5
1.2	Software License.....	5
1.3	Obligations and Restrictions.....	6
1.4	Transfer	6
1.5	Intellectual Property Ownership, Reservation of Rights	6
1.6	No Warranty.	6
1.7	Limitation of Liability.....	6
1.8	General Provisions.....	7
1.9	Compliance with Licenses.	7
2	General information	8
2.1	Packing contents.....	8
2.2	Meaning of the used symbols.....	8
2.3	Description	9
2.4	PC system requirements	9
2.5	Required Hardware	10
3	Installing the software on a PC.....	11
3.1	Key Code (Activation Code) for the software.....	11
3.2	Installing the software.....	11
4	Basic configuration of the plant.....	13
4.1	In situ operation (Direct connection)	13
4.2	Remote control via modem without management system	14
4.3	Remote control via management system.....	14
5	Connection to the plant.....	15
5.1	Requirements	15
5.2	Connection via COM port (in situ connection)	16
5.3	Connection via Modem	17
5.4	Connection via Ethernet.....	18
6	Controlling the plant.....	19
6.1	Read data (configuration)	19
6.2	Menu File – Administrate the configuration data	20
	New plant	21
	 Open plant	21
	 Save plant	22
	 Save plant as.....	22
	Close plant	22

	 Print plant	23
	Export	24
	Exit	24
6.3	Menu Plant – Communication programme <=> plant.....	24
	 Read data.....	25
	 Send data.....	26
	 Control unit.....	27
	Reset.....	27
	  Activate () / Deactivate () connection	28
6.4	Menu Edit – Plant configuration	28
	 Data settings	28
	Example:	29
	Section Input Line A/B:	30
	Section Output Line A/B:.....	30
	Section Output "Line ASI":.....	31
	 Create NIT (Network Information Table).....	32
	"Logical Channel Number - LCN":.....	33
	Save the NIT.....	37
	Edit NIT (Network Information Table).....	38
	Section "From" > cassette:	39
	Section "From" > All:	39
	Section "From" > New:	40
	Section "From" > Import:	40
	Section "From" > Headline:	41
	Section "New":.....	42
	Section "To":.....	43
	Export:	44
	Copy NIT	45
	 Timer.....	47
	Define a timing circuit:	47
	Define a new timer:	48
	Edit a timer:	48
	Delete timer:	48
	Sort timer:	49
	Spectrum I/Q.....	50
	 MTP Function.....	51
	Section "Routing":	52
	Section "Input":.....	52
	Section "Output":	55
	Toolbar:.....	55
	 Logbook	56
	 Data rate measurement	57

	Reset filter settings ("Clear Output list")	57
	Read stream information	58
	Add a new PID	59
	Remap a PID	59
	Plant settings	60
	Station data:	61
	Tab "Password":	61
	Tab "Modem":	62
	Tab "Ethernet":	62
	Tabs for the Alarm settings:	64
	Tab "Alarm settings":	64
	Tab "Alarm Modem":	65
	Tab "Alarm E-Mail":	66
	Tab "Alarm SNMP-Traps":	67
	Monitoring cassette	68
	Change transmitter	69
	Insert transmitter from head station	69
	New transmitter	70
	Delete transmitter	70
	Reference level	70
	Switching on  and off  the transmitter control individually:	70
	Cassette settings	71
	Cassette settings – section "Output":	71
	Cassette settings – section "Video":	72
	Cassette settings – section "Level tolerance settings":	73
	Cassette settings – section "Attenuation setting":	73
	Cassette settings – section "Display Text":	73
	Backup System	74
	Input assignment:	74
	Backup System: Output	75
	Backup System: Input	75
	MTP Program	76
	Edit selection	76
	Component plant:	76
	Component Station:	76
	Component Cassette:	77
6.5	Menu Options	78
	Monitoring cassette	78
	Level indication:	78
	Start search run:	79
	Management unit	79
	Test alarm report:	79

Timer	80
Time offset:	80
Restart Timer:	81
Key.....	82
IPS1	82
6.6 Menu Language	82
6.7 Menu Help	82
6.8  Station configuration	83
7 Final Hints.....	84
Annex A.....	85
A1 Connection PC ➡ Ethernet ➡ UMTS-VPN ➡ Management system.....	85
Sample configuration with tested components	85
Components used	86
Functional principle	86
Configuration sequence	87
8 Index.....	96

1 SOFTWARE LICENSE AGREEMENT

This document includes warranty information and a license agreement governing the use of **TRIAX A/S** software.

1.0 SOFTWARE LICENSE AGREEMENT

By using, copying or distributing the **TRIAX** software, you accept all the terms and conditions of this agreement, including, in particular, the provisions on:

- Use contained in section 1.2;
- Transferability in section 1.4;
- Warranty in section 1.6 and liability in section 1.7.

Upon acceptance, this agreement is enforceable against you and any entity that obtained the software and on whose behalf it is used.

If you do not agree, do not use the software.

TRIAX permits you to use the software only in accordance with the terms of this agreement.

1.1 DEFINITIONS

"**TRIAX**" means **TRIAX A/S, Bjørnkärvej 3, 8783 Hornsyld, Dänemark**.

"**Computer**" means a virtual or physical personal electronic device that accepts information in digital or similar form and manipulates it for a specific result based on a sequence of instructions.

"**Software**" means all of the contents of the files (delivered electronically or on physical media), or CD or other media with which this agreement is provided, which may include **TRIAX** or third party computer information or software, including **TRIAX "CCRS 1000"** and **TRIAX "BE-Flash"**; related explanatory written materials or files ("Documentation"); and upgrades, modified versions, updates, additions, and copies of the foregoing, provided to you by **TRIAX** at any time (collectively, "Updates").

"**Use**" means to access, install, download, copy, or otherwise benefit from using the functionality of the Software.

1.2 SOFTWARE LICENSE

If you obtained the Software from **TRIAX** or one of its authorized licensees, and subject to your compliance with the terms of this agreement, including the restrictions in Section 1.3, **TRIAX** grants to you a non-exclusive license to use the Software in the manner and for the purposes described in the Documentation as follows:

1.2.1 General Use

You may install and use one copy of the Software on your compatible Computer. See Section 1.3 for important restrictions on the use of the Software.

1.2.2 Server Use

This agreement does not permit you to install or use the software on a computer file server.

1.2.3 Distribution

This license does not grant you the right to sublicense or distribute the Software.

1.2.4 Backup Copy

You may make one backup copy of the Software, provided your backup copy is not installed or used. You may not transfer the rights to a backup copy unless you transfer all rights in the Software as provided under Section 1.4.

1.3 OBLIGATIONS AND RESTRICTIONS

1.3.1 Notices

Any copy of the Software that you make must contain the same copyright and other proprietary notices that appear on or in the Software.

1.3.2 No Modification or Reverse Engineering

You may not modify, adapt, translate or create derivative works based upon the Software. You will not reverse engineer, decompile, disassemble or otherwise attempt to discover the source code of the Software except to the extent you may be expressly permitted to reverse engineer or decompile under applicable law.

1.4 TRANSFER

You may not rent, lease, sublicense, assign or transfer your rights in the Software, or authorize all or any portion of the Software to be copied onto another user's Computer except as may be expressly permitted by this agreement. You may, however, transfer all your rights to use the Software to another person or legal entity provided that:

- you also transfer this agreement, and the Software and all other software or hardware bundled or pre-installed with the Software, including all copies, updates and prior versions, to such person or entity,
- you retain no copies, including backups and copies stored on a Computer, and
- the receiving party accepts the terms and conditions of this agreement and any other terms and conditions upon which you obtained a valid license to the Software. Notwithstanding the foregoing, you may not transfer education, pre-release, or not for resale copies of the Software.

1.5 INTELLECTUAL PROPERTY OWNERSHIP, RESERVATION OF RIGHTS

The Software and any authorized copies that you make are the intellectual property of **TRIAX**. The structure, organization and code of the Software are the valuable trade secrets and confidential information of **TRIAX**. Except as expressly stated herein, this agreement does not grant you any intellectual property rights in the Software and all rights not expressly granted are reserved by **TRIAX**.

1.6 NO WARRANTY.

The software is being delivered to you "as is" and with all faults. **TRIAX** and its suppliers do not and cannot warrant the performance or results you may obtain by using the software, certificate authority services or other third party offerings. Except to the extent any warranty, condition, representation or term cannot or may not be excluded or limited by law applicable to you in your jurisdiction, **TRIAX** and its suppliers make no warranties conditions, representations, or terms (express or implied whether by statute, common law, custom, usage or otherwise) as to any matter including without limitation noninfringement of third party rights, merchantability, integration, satisfactory quality, or fitness for any particular purpose. The provisions of section 1.6 and section 1.7 shall survive the termination of this agreement, howsoever caused, but this shall not imply or create any continued right to use the software after termination of this agreement.

1.7 LIMITATION OF LIABILITY.

1.7.1 In no event will **TRIAX** or its suppliers be liable to you for any damages, claims or costs whatsoever including any consequential, indirect, incidental damages, or any lost profits or lost savings, even if an **TRIAX** representative has been advised of the possibility of such loss, damages, or claims. The foregoing limitations and exclusions apply to the extent permitted by applicable law in your jurisdiction. **TRIAX'** aggregate liability and that of its suppliers under or in connection with this agreement shall be limited to the amount paid for the software, if any. Nothing contained in this agreement limits **TRIAX'** liability to you in the event of death or per-

sonal injury resulting from **TRIAx**' negligence or for the tort of deceit (fraud). **TRIAx** is acting on behalf of its suppliers and Certificate Authorities for the purpose of disclaiming, excluding and/or limiting obligations, warranties and liability as provided in this agreement, but in no other respects and for no other purpose.

1.7.2 Limitation of Liability for Users Residing in Germany and Austria

1.7.2.1 If you obtained the Software in Germany or Austria, and you usually reside in such country, then Section 1.7.1 does not apply. Instead, subject to the provisions in Section 1.7.2.2, **TRIAx**' statutory liability for damages shall be limited as follows:

- **TRIAx** shall be liable only up to the amount of damages as typically foreseeable at the time of entering into the license agreement in respect of damages caused by a slightly negligent breach of a material contractual obligation and
- **TRIAx** shall not be liable for damages caused by a slightly negligent breach of a non-material contractual obligation.

1.7.2.2 The aforesaid limitation of liability shall not apply to any mandatory statutory liability, in particular, to liability under the German Product Liability Act, liability for assuming a specific guarantee or liability for culpably caused personal injuries.

1.7.2.3 You are required to take all reasonable measures to avoid and reduce damages, in particular to make back-up copies of the Software and your computer data subject to the provisions of this agreement.

1.8 GENERAL PROVISIONS.

If any part of this agreement is found void and unenforceable, it will not affect the validity of the balance of this agreement, which shall remain valid and enforceable according to its terms. This agreement shall not prejudice the statutory rights of any party dealing as a consumer. This agreement may only be modified by a writing signed by an authorized officer of **TRIAx**. Updates may be licensed to you by **TRIAx** with additional or different terms. This is the entire agreement between **TRIAx** and you relating to the Software and it supersedes any prior representations, discussions, undertakings, communications or advertising relating to the Software.

1.9 COMPLIANCE WITH LICENSES.

If you are a business or organization, you agree that upon request from **TRIAx** or **TRIAx**' authorized representative, you will, within thirty (30) days, fully document and certify that use of any and all Software at the time of the request is in conformity with your valid licenses from **TRIAx**.

2 GENERAL INFORMATION

2.1 PACKING CONTENTS

- 1 CD (Software CCRS 1000 and assembly instructions)
- 1 adapter (in order to connect the control unit to a modem)
- 1 connection cable (RS 232)

2.2 MEANING OF THE USED SYMBOLS



Important note



General note



Performing works

—> The shown illustrations of menus are partly dependent on the cassettes resp. its software versions as well as the used operating system and its settings.
Variations are possible.

2.3 DESCRIPTION

The CCRS 1000 software allows to configure, record and store the settings of head-end stations / plants of the head-end station system CSE 3300 online as well as off-line.

—> **All settings (with exception of the "direct control via the virtual control unit") first will be done in the CCRS 1000 software (random access memory – RAM of PC) and must be finally transferred to the plant ("send data")!**

All current cassettes and head-end stations of the can be controlled with a PC directly via the serial COM port interface of the head-end station, or remote controlled via a modem, a GSM mobile phone or via Ethernet by using a corresponding management system.

Software updates:

Always keep the software versions of the head-end stations and the CCRS 1000 always up-to-date in order to be able to configure also the newest products.

—> The most recent version can be downloaded from "www.triax.com".
 —> Remote software updates for head-end stations and cassettes can be done with the BEflash software.

2.4 PC SYSTEM REQUIREMENTS

System requirements for the CCRS 1000 software:

- PC with a Pentium processor,
- Windows 95*/98*/ME/2000/XP/Vista/7 (*from Internet Explorer 5 on),
- at least 32 MB RAM, at least 50 MB free space on hard drive,
- LAN interface (RJ 45 socket, for remote control via Ethernet),
- serial interface (RS-232 Sub D, for in situ operation),
 for PCs with USB connector (without serial interface) use a commercially available USB / RS-232 adapter.
- modem (for remote control via phone).
- network/internet access for downloads and remote control via internet.

2.5 REQUIRED HARDWARE

Only one head-end station can be configured without a management unit. For in situ configuration of the head-end station the PC must be connected to the control unit (RS-232 cable). The head-end station can be remote controlled if a modem is connected to the control unit (BE-Remote) and the modem function is activated in the control unit (see page 15).

In order to remote control more than one head-end stations of a plant via the CCRS 1000 software following additional hardware is required (dependent on the kind of connection "router with Internet access" or "modem with phone connection"):

- Management system CCRC 2 for remote control via Ethernet of up to two head-end stations or one head-end station + monitoring cassette CCMC 6000 or backup system CCB 16/8,

or

- management unit CCRC 8 for remote control via Ethernet (requires an additional LAN adapter CCLA) or modem of up to 8 head-end stations, resp. monitoring cassette CCMC 6000 or backup system CCB 16/8.

Overview:

	Number of control- lable components	CCMC 6000	CCB 16/8	In situ control via COM port	Remote control via modem	Remote control via GSM phone	Remote control via LAN (Internet)
CCRC 2	2	• ¹⁾	• ¹⁾	—	—	—	•
CCRC 8	8	•	•	•	•	•	• ²⁾
BE-Remote	1	—	—	•	•	•	• ²⁾

¹⁾ CCMC or CCB

²⁾ requires an additional LAN adapter CCLA

3 INSTALLING THE SOFTWARE ON A PC

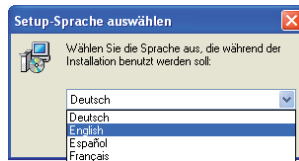
3.1 KEY CODE (ACTIVATION CODE) FOR THE SOFTWARE

A key code is required for the activation of the CCRS 1000 software.

3.2 INSTALLING THE SOFTWARE

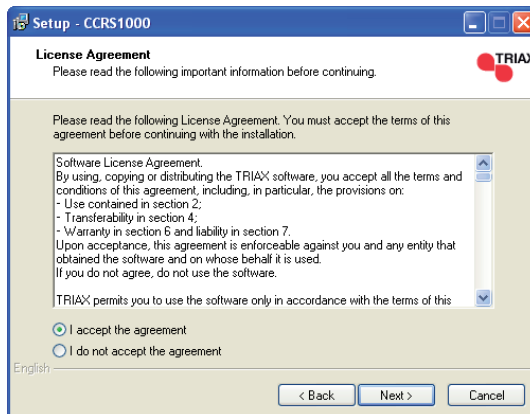
You will find the CCRS 1000 software on the CD attached.

- Unzip the "CCRS1000_Vxx.zip" file and start the "setup_CCRS1000_Vxx.exe" programme by a double click.
- Select the desired language and click the **OK** button to confirm.



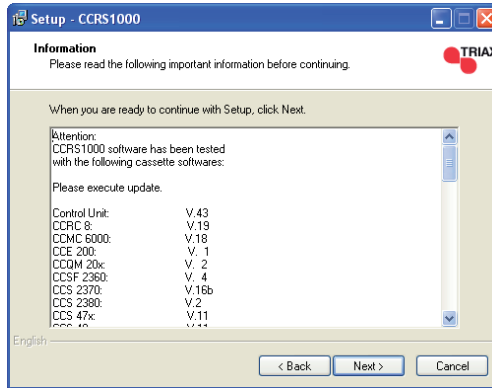
- When the "Setup-CCRS 1000" menu appears, click the **"Next >"** button.

—> The "License Agreement" window is activated.



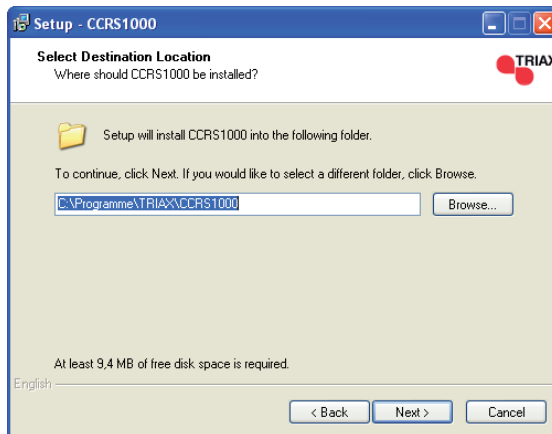
- Read the license agreement.
- If you accept the license agreement select **"I accept the agreement"** and click the **"Next >"** button.

- A table will appear which lists the software versions of the cassettes which are compatible with the CCRS 1000 software.



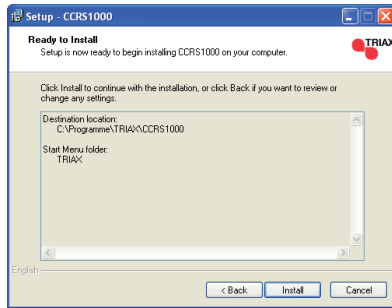
- **Keep the software version of the CCRS 1000 always up-to-date in order to be able to remote control also the newest products.**
- **After installing the CCRS 1000 software, update the software for the cassettes if necessary.**

- Click the "**Next >**" button.
- Specify the directory in which the CCRS 1000 should be installed (e.g. C:\Programme\TRIAX\CCRS 1000).



- Click the "**Next >**" button.
- Enter a name for the shortcut to the programme which will be created in the start menu.

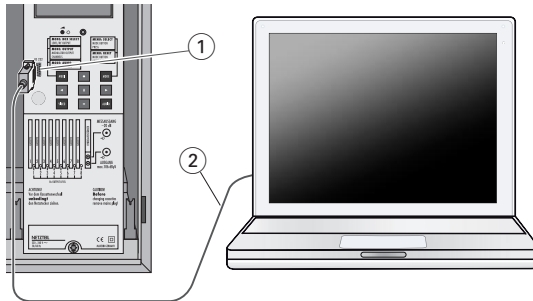
- Click the "**Next >**" button.
- Click on "**Install**" in order to proceed with the installation of the programme, or on "**Back**" to make corrections or changes.



4 BASIC CONFIGURATION OF THE PLANT

4.1 IN SITU OPERATION (DIRECT CONNECTION)

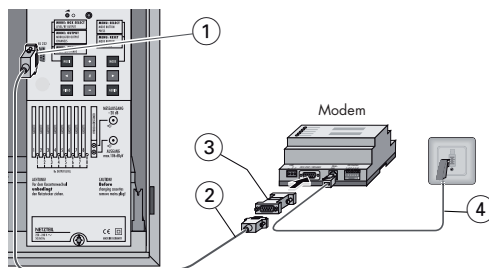
Via direct connection it is possible to control the head-end station more comfortable than via the control unit. In addition the configuration can be stored on the PC.



- Connect the RS-232 interface (1) on the control unit with the serial interface (e.g. COM 1) on the PC using the supplied cable (2). For PCs without a serial interface, please use a standard USB / RS-232 adapter.

4.2 REMOTE CONTROL VIA MODEM WITHOUT MANAGEMENT SYSTEM

Head-end stations can be remotely configured if a PC with a modem is used (alarm messages, timer function and the control of a backup system are not possible). If a GSM modem is selected, the control unit transmits the PIN to the modem. It is also necessary to set the PIN for the SIM card to "0000".



- Connect the supplied cable (2) to the RS-232 interface on the control unit (1).
- Plug the cable (2) into the supplied adapter (3) (make sure they are properly aligned) and tighten the fastening screws. In doing so, observe the labelling on the adapter.
- Plug the adapter (3) into the serial interface (RS 232) on the modem and tighten the fastening screws.
- Using a standard telephone cable (4), connect the modem to a phone jack (only for analog modem).
- Activate the modem operation via the menu of the control unit for the head-end station.

—> Therefore observe the assembly instruction of the head-end station.

—> **Deactivate modem operation (OFF) in order to remote control via a management unit or to control in situ (PC is connected directly).**

4.3 REMOTE CONTROL VIA MANAGEMENT SYSTEM

The basic configuration of the plant depends on the kind of connection (Internet, phone, RS-232) and the management system used.

It must be done during the installation of the management system and is therefore described in its assembly instruction.

5 CONNECTION TO THE PLANT

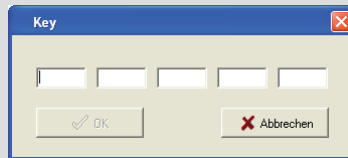
5.1 REQUIREMENTS

The basic configuration of the used management system must already be done during its assembly.

—> Therefore observe the assembly instruction of the management unit.

- Start the CCRS 1000 software.

—> A key code is required for the activation of the programme.

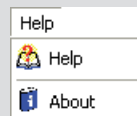


- Click the "OK" button when entered the 25 key code.

—> Via menu "Language" select the language of the menus.



—> Via menu "Help/Help" you reach the online help (German).
Menu "Help/About" shows the software version.



5.2 CONNECTION VIA **COM** PORT (IN SITU CONNECTION)

(not possible with CCRC 2)

- Click the  button.

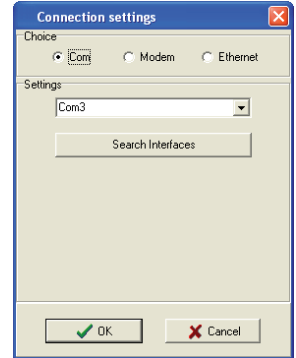
—> The "Connection settings" window is activated.


- Select button "Com".

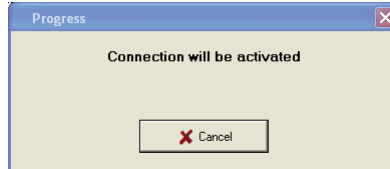
—> All in your system existing Com ports are listed.



- Select the corresponding Com port.

—> You can find the current COM port of an used USB/RS-232 adapter via the Windows system control.



- Click the  OK button.

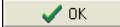


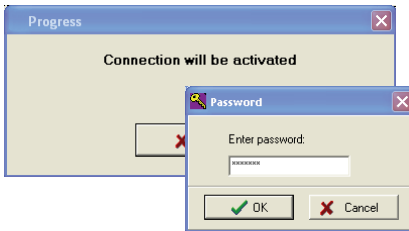
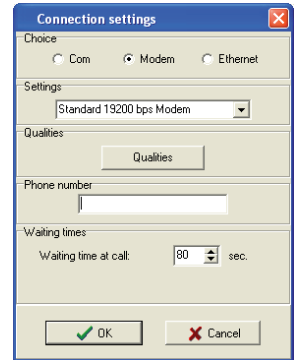
—> The status indicator left below will change from  Offline to  Online.


5.3 CONNECTION VIA MODEM



- Click the  button.

→ The "Connection settings" window is activated.

- Select button "Modem".
- Enter the phone number of the modem of the management unit / head-end station at "Phone number".
- If necessary correct the waiting time for call and recall.
- Adjust "Settings" and "Qualities" according to your modem.
- Click the  button.



- If a password was set before enter the password (case-sensitive).
- Click the  button.

→ The status indicator left below will change from  Offline to  Online.

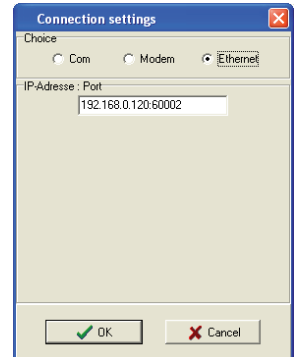
→ At connection via modem the phone status is shown.

5.4 CONNECTION VIA ETHERNET

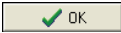
- Click the  button.

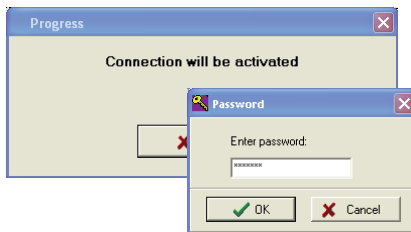
→ The "Connection settings" window is activated.

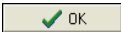
- Select button "Ethernet" and enter
 - at connection via a **local network** the IP address and the port of the management unit (separated by a colon) e.g. **192.168.0.120:60002**;
 - at connection via the **Internet** the "external" (public) IP address of the router or its "dynamic DNS account" and the port of the management unit (separated by a colon) e.g. **212.20.172.000:60002**.





- For remote control via Internet the router of the management unit must be connected to the Internet. In addition its "public" IP address with which it is connected to the Internet must be known.
- Port forwarding must be set for the port you set during LAN configuration at the router of the management unit.
- Observe the operating instructions of the router.

- Click the  button.



- If a password was set before enter the password (case-sensitive).
- Click the  button.

→ The status indicator left below will change from  Offline to  Online.

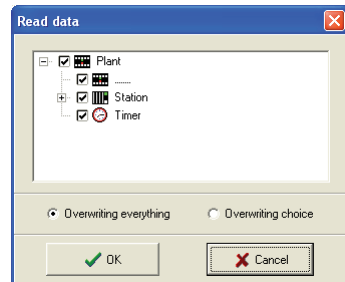
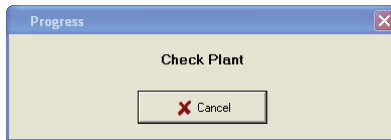
6 CONTROLLING THE PLANT

- Functions/settings, currently not available (e.g. management unit does not support this function etc.) are disabled.
- All settings (with exception of the "direct control via the virtual control unit") first will be done in the CCRS 1000 software (random access memory – RAM of the PC) and must be sent finally to the plant ("send data")!



6.1 READ DATA (CONFIGURATION)

Via this function the current configuration of the plant can be imported into the programme.

- Click the  button.



- Select which data should be imported.

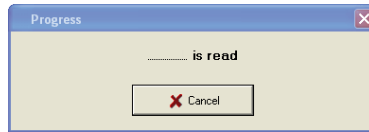
→ Individual cassettes can be shown by symbol "+" ( ) for individual selection.

- Select whether "everything", or only the selection (choice) should be overwritten.

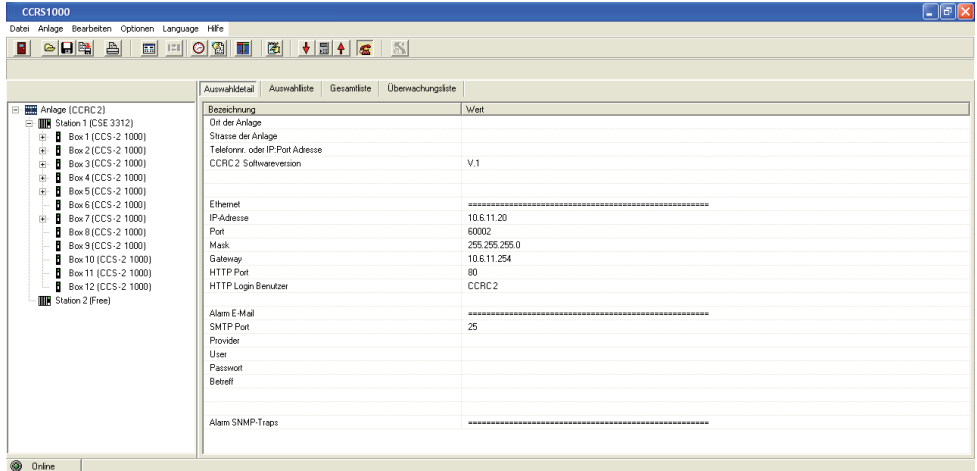
→ For example: If only one cassette together with "overwriting everything" is selected, all the data of the other cassettes will be deleted in the configuration data of the PC.

- Click the  button.

→ The selected data will be imported.



→ After reading the plant is shown. e.g. ...



In the left window (tree structure) the hardware configuration of the plant is shown.

Dependent on the selected tab the right window shows:

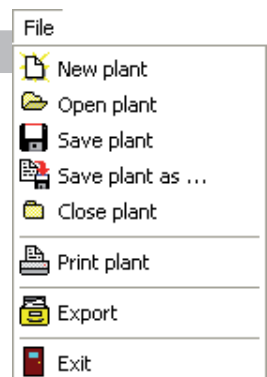
- Detailed information (**Detail of choice**) or
- basic information (**Choice list**) of the components selected in the left window, or
- basic information (**Complete list**) of all fitted cassettes, or
- the supervision list (**Supervision list**) at installed monitoring cassette (page 69).

6.2 MENU FILE – ADMINSTRATE THE CONFIGURATION DATA

Via menu "File" the data of the configuration held in the main memory can be administrated.



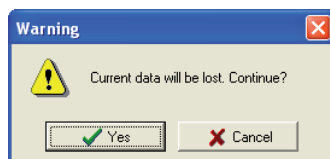
All changes/configurations, done in the CCRS 1000, first are held in the temporary random access memory (RAM). Save the configuration data (recommended) so that they can not be lost.



NEW PLANT

In this menu you can start a new "empty" configuration.

- Select menu item **File > New plant**.



- Confirm the warning with button .


—> Not saved data are deleted!

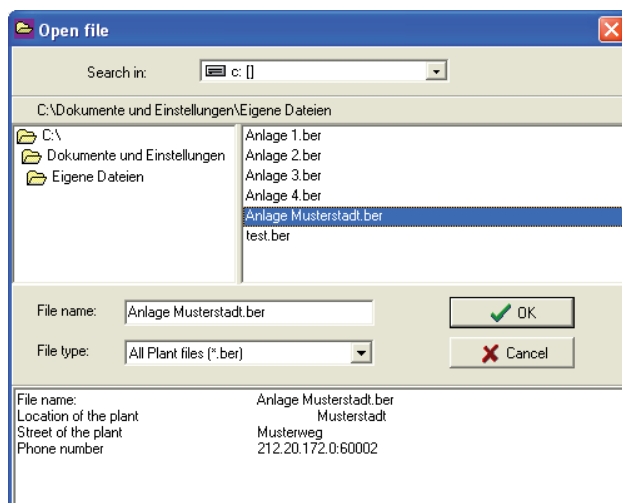
—> Menu "Plant settings" appears (page 61).

OPEN PLANT

In this menu the saved data of a plant can be loaded into the CCRS 1000.

- Select menu item **File > Open plant**.

—> This function can also be selected by button .




- Select a plant and confirm with button .

- > In the lower part of the window the "station data" of the plant settings menu are shown.
- > The saved data are loaded into the programme (RAM).

SAVE PLANT

In this menu the current configuration can be saved (backup).


- Select menu item **File > Save plant**.

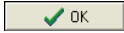
- > This function can also be selected by button .
- > The configuration data loaded in the RAM will be saved.
- > At new prepared or read data the menu "Save plant as..." appears if a filename is not yet assigned.

SAVE PLANT AS...

In this menu the current configuration can be saved with a different file name (variant).

- Select menu item **File > Save plant as...**

- > This function can also be selected by button .
- > The menu "Save plant as..." appears.

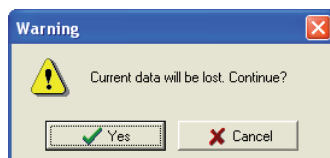
- If necessary select a different folder, enter a file name and save the file with button .

CLOSE PLANT

In this menu the current configuration can be closed.

- > Not saved data will be lost!

- Select menu item **File > Close plant**.




- Close the plant with button .


PRINT PLANT

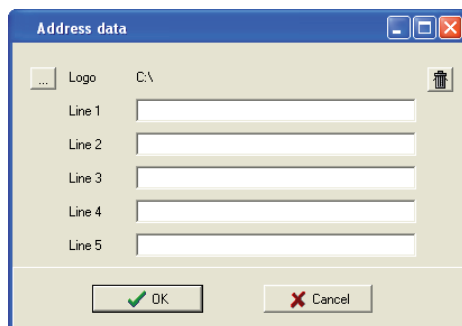
In this menu the current configuration can be printed.

- Select menu item **File > Print plant**.

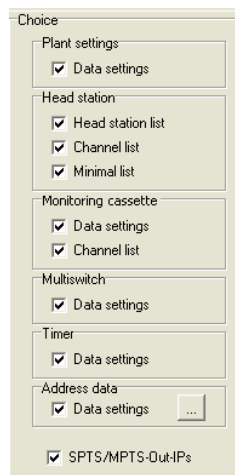
- This function can also be selected by button .
- A "Print preview" window appears.
- In the main section of the window the print preview dependent on the selected settings is shown.

- Select all settings to be printed in section "Choice".


Select submenu "Address data" via button  in section "Address data".



The "Address data" dialog box has a title bar with standard window controls. It contains a "Logo" section with an ellipsis button and a file icon. Below this are five text input fields labeled "Line 1" through "Line 5". At the bottom are "OK" and "Cancel" buttons.




The "Choice" settings panel lists several categories with checkboxes: "Plant settings" (Data settings), "Head station" (Head station list, Channel list, Minimal list), "Monitoring cassette" (Data settings, Channel list), "Multiswitch" (Data settings), "Timer" (Data settings), "Address data" (Data settings, with an ellipsis button), and "SPTS/MPTS-Out-IPs".

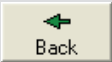
In this submenu for example you can enter the address data of the plant. In addition via button " Logo" you can add a bit mapped graphic (".bmp" e.g. a company logo). These address data are printed in the headline.

- Button  deletes the logo.

- Confirm the address data with button .

- Start printing with button .

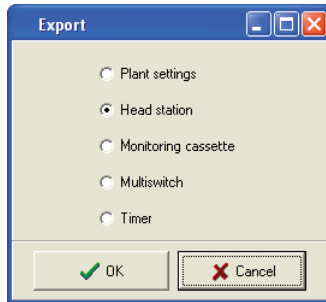
- Enter the printer setup menu of your PC with button .

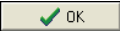
- The print preview can be cancelled with button .

EXPORT

In this menu parts of the configuration can be exported as a text file.

- Select menu item **File > Export**.



- Select the part to be exported and confirm with button . Enter a file name and the path of the memory location in the appearing "Save as" window in order to store the file.

EXIT

With this menu item you can exit the programme.

—> Attention: Unsaved changes will be lost.

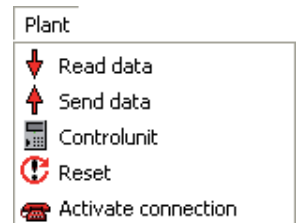
- Select menu item **File > Exit**.

6.3 MENU PLANT – COMMUNICATION PROGRAMME <=> PLANT

The communication with the plant is done via menu "Plant".




All settings (with exception of the "direct control via the virtual control unit") first will be done in the CCRS 1000 software (RAM of the PC). In order to get it "active" at the plant the configuration data must be sent finally to the plant ("Send data")!

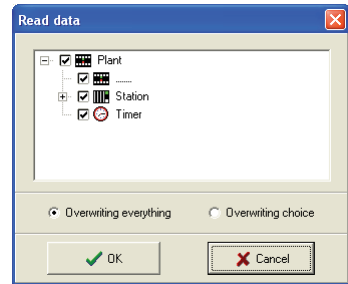
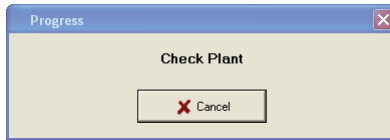


**READ DATA**


In this menu you can read the configuration data out of the plant into the programme (RAM).

- Select menu item **Plant > Read data**.

- This function can also be selected by button .
- If there is no connection to the plant, the menu "Connection settings" appears. For a detailed description of this menu see chapter 5 "Connection to the plant" (page 16).



- Select which data of the head-end station should be read.

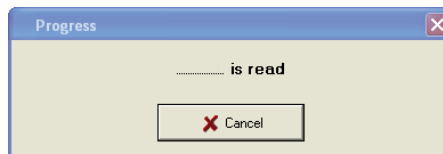
- Individual cassettes can be shown by symbol "+" () for individual selection.

- Select whether "everything" or only the selection ("choice") should be overwritten.

- For example: If only one cassette together with "overwriting everything" is selected, all the data of the other cassettes will be deleted in the configuration data of the PC.

- Click the  OK button.


- The selected data will be imported.

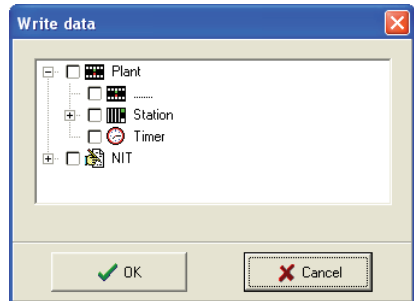
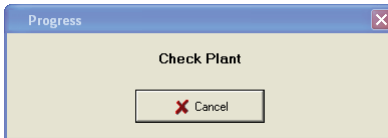


SEND DATA


In this menu you can send the configuration data out of the PC into the plant.

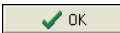
- Select menu item **Plant > Send data**.

- > This function can also be selected by button .
- > If there is no connection to the plant, the menu "Connection settings" appears. For a detailed description of this menu see chapter 5 "Connection to the plant" (page 16).

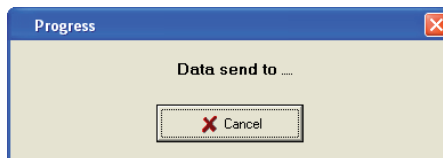


- Select which data should be sent into the head-end station.

- > Individual cassettes can be shown by symbol "+" () for individual selection.

- Click the  button.


- > The selected data will be sent.




CONTROL UNIT

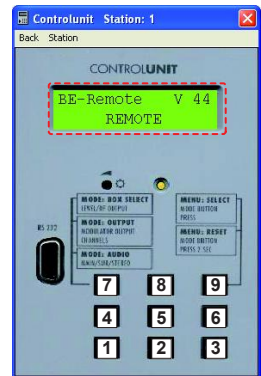
In this menu you receive a "virtual" control unit in order to operate the plant via the PC.

- Select menu item **Plant > Control unit**.

- > This function can also be selected by button .
- > If there is no connection to the plant, the menu "Connection settings" appears. For a detailed description of this menu see chapter 5 "Connection to the plant" (page 16).

Via this menu the control unit of the plant can be remote controlled. If several stations are connected select the corresponding control unit in menu "Station". The keys of the figure are designed as buttons (mouse control). In order to activate the system information menu click into the display image. In addition operation via the number keypad of the PC is possible. The assignment of the keys is shown in the figure.

Close the menu with menu item **Back** or button .

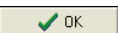


RESET

With this menu item you can restart the plant.

- Select menu item **Plant > Reset**.

- > If there is no connection to the plant, the menu "Connection settings" appears. For a detailed description of this menu see chapter 5 "Connection to the plant" (page 16).
- > The number of selectable stations depends on the kind of connection / management unit.





- Select the stations to be reset and confirm with button .



ACTIVATE () / **DEACTIVATE** () **CONNECTION**

With this menu item you can activate/deactivate the connection to the plant (toggle function).


- Select menu item **Plant > Activate / Deactivate connection**.

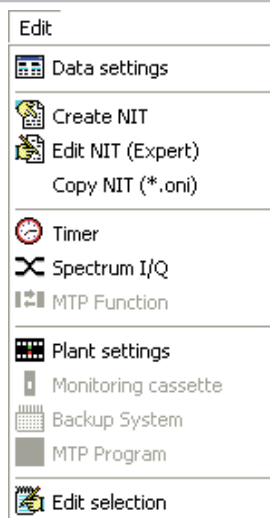
- This function can also be selected by button  / .
- If there is no connection to the plant (menu " Activate connection"), the menu "Connection settings" appears. For a detailed description of this menu see chapter 5 "Connection to the plant" (page 16).
- If there is already an active connection to the plant (menu " Deactivate connection"), the connection will be deactivated.

6.4 MENU EDIT – PLANT CONFIGURATION

All necessary tools for configuring the plant are included in menu "Edit":




All settings (with exception of the "direct control via the virtual control unit") first will be done in the CCRS 1000 software (random access memory – RAM of the PC). In order not to loose the configuration data it should be saved (recommended). To get it "active" at the plant the configuration data must be sent finally to the plant ("Send data" )!




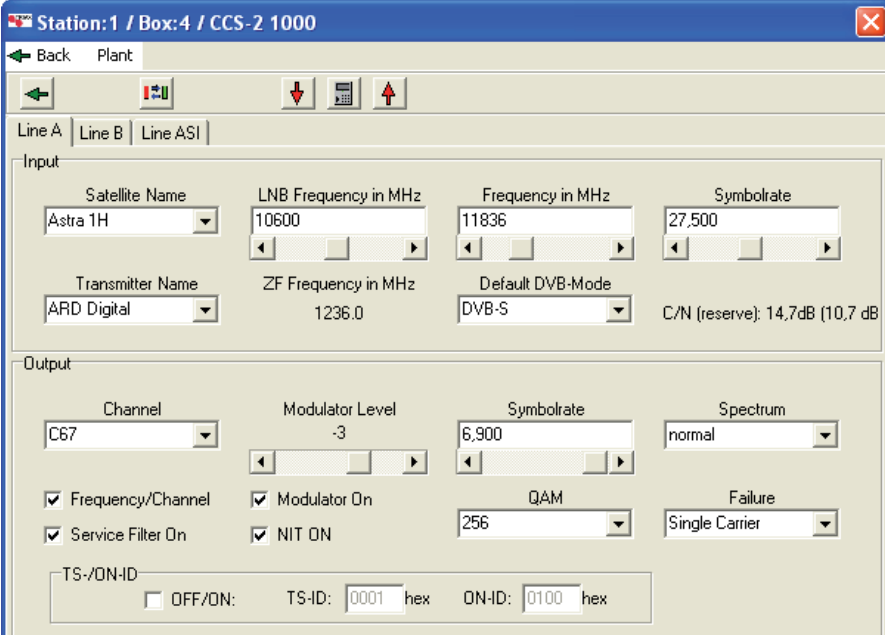
DATA SETTINGS

Via this menu a component marked in the left window (tree structure) can be configured.

- Select the component to be configured in the left window (tree structure).
- Select menu item **Edit > Data settings**.

- This function can also be selected by button  or the context menu (right mouse button).

- If a plant is selected, the menu "Plant settings" appears (see page 61).
- All settings to be done via the control unit are possible.
As the settings (and therefore the menus) of the individual cassettes are quite different, cassette CCS-2 1000 is described exemplary in this instruction.
- The changes take effect not until they are sent to the plant .

EXAMPLE:


Station: 1 / Box: 4 / CCS-2 1000

Back Plant

Line A | Line B | Line ASI

Input





Satellite Name Astra 1H	LNB Frequency in MHz 10600	Frequency in MHz 11836	Symbolrate 27,500
Transmitter Name ARD Digital	ZF Frequency in MHz 1236.0	Default DVB-Mode DVB-S	C/N (reserve): 14,7dB (10,7 dB)

Output

Channel C67	Modulator Level -3	Symbolrate 6,900	Spectrum normal
<input checked="" type="checkbox"/> Frequency/Channel	<input checked="" type="checkbox"/> Modulator On	QAM 256	Failure Single Carrier
<input checked="" type="checkbox"/> Service Filter On	<input checked="" type="checkbox"/> NIT ON		

TS-/ON-ID

☐ OFF/ON: TS-ID: 0001 hex ON-ID: 0100 hex

- The function of buttons , ,  are described in the main menu "Plant" (page 25), button  is described in menu "Edit > MTP function" (page 52).

In the example the menu contains three submenus (tap - Line A, Line B and Line ASI). In section "Input" of "Line A(B)" all settings for tuner input A(B), in section "Output" all settings for the modulator output A(B) are to be done. "Line ASI" contains all settings for the ASI output.

In the following figures the input fields are assigned to the corresponding menus of the control unit.

SECTION INPUT LINE A/B:

Input

Satellite Name: Astra 1H

Transmitter Name: ARD Digital

LNB Frequency in MHz: 10600

Frequency in MHz: 11836

Symbolrate: 27,500

Default DVB-Mode: DVB-S

C/N (reserve): 14,6dB (10,6 dB)

In the input fields "Satellite Name" and "Transmitter Name" an optional text (max. 16 character) can be entered.

- This text is shown in listings and facilitates the identification of the transponder set.
- "Names" can only be stored in an existing management system.

SECTION OUTPUT LINE A/B:

Output

Channel: C67

Modulator Level: -3

Symbolrate: 6,900

QAM: 256

Spectrum: normal

Failure: Single Carrier

TS-/ON-ID: OFF/ON

TS-ID: 0001 hex

ON-ID: 0100 hex

Input

Channel: C67

Modulator Level: -3

Symbolrate: 6,900

QAM: 256

Spectrum: normal

Failure: Single Carrier

TS-/ON-ID: OFF/ON

TS-ID: 0001 hex


ON-ID: 0100 hex

SECTION OUTPUT "LINE ASI":

The screenshot shows the 'Output' configuration menu for 'LINE ASI'. At the top, there are two summary boxes: 'Bx 4 ASI RATE' showing '108000 KBits' and 'Bx 4 ASI OPTION' showing '188 pos. cont.'. Below these, the 'Output' menu is displayed with four sub-sections, each with a red box around its value: 'ASI Rate in Mbits:' (108,000), 'Packet Length' (188), 'Polarisation' (positive), and 'ASI Mode' (cont.). Red lines connect the summary boxes to the corresponding input fields in the menu.

—> For further information about the settings observe the assembly instruction of the corresponding cassette.

Close the menu:

- Close the menu via the menu item **Back** or buttons  / .




CREATE NIT (NETWORK INFORMATION TABLE)

Via this menu you can create a new NIT.

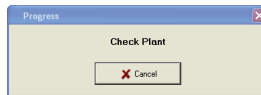
- > The NIT contains information about the output signals of the plant, which receivers need to do a station search. As most of the receivers cannot work with more than one NIT, all cassettes of a plant must have the same NIT containing all services. This function creates a NIT (including all services) which will be transmitted to all cassettes.

- Select menu item **Edit > Create NIT**.

- > This function can also be selected by button  or the context menu (right mouse button).



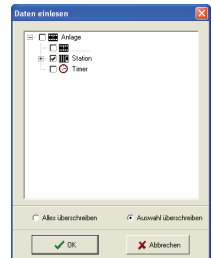
- Click the  button.



Do not modify the selection!

So it is ensured that all necessary data will be read.

- Click the  button.



- > The selected data will be read.

- For standard applications leave the check at "Taking nit of original".
- For special applications remove the check and enter the specific values.

—> Incorrect values may cause malfunctions!

Frequenz	Symbol	TS_ID	OR_ID
306,000	6,900	096A	0002
706,000	6,900	044D	0001
850,000	6,900	044D	0001
306,000	-	096A	0002
850,000	-	044D	0001
858,000	-	044D	0001

—> Via menu **Plant > Controlunit** or button modifications still can be done at the station (see page 28). That the changes can be considered when the NIT is created you should read in again the station data via the menu **Plant > Read data** or the button.

- Send the NIT to the plant using button .

—> NIT is switched to ON at all cassettes.

Do not modify the selection!

So it is ensured that all necessary data will be sent.

- Click the button.

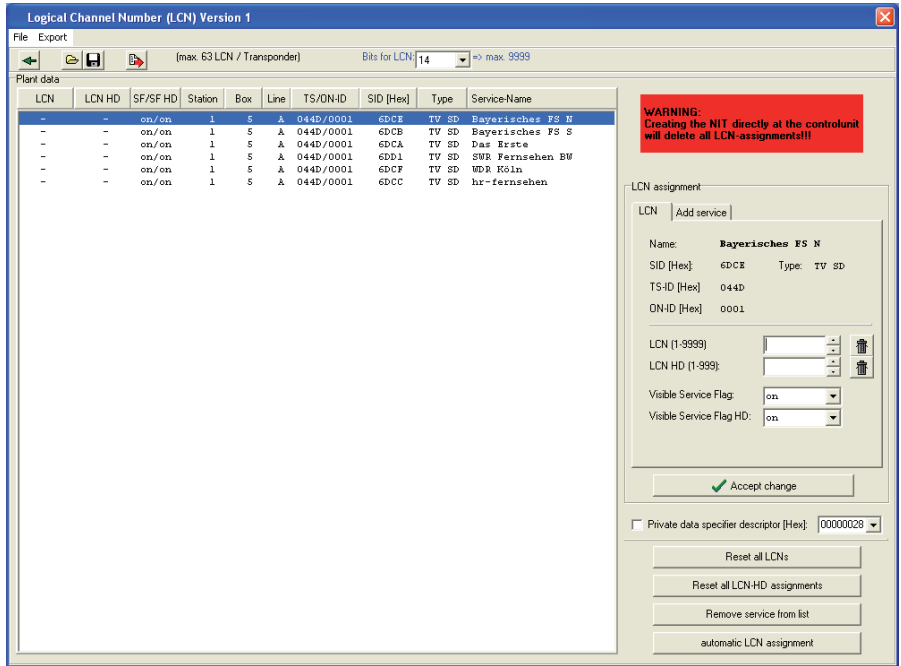
"LOGICAL CHANNEL NUMBER - LCN":

LCN is a static, virtual assignment of programme numbers for services.

Suitable receivers use these LCN information in order to sort the channels after a station search. The LCN information is part of the Network Information Table (NIT).

- > At present LCN version 1 is supported.
- > As several LCN specifications exist, the settings "Bits for LCN" (10/14) as well as "Private data specifier descriptor" (checkbox/00000028/00000029/0000233A) must be done dependent on the receiving end (country specific).

- Click the **LCN** button in the "Create NIT" menu.



- All services are shown in the table.
- Clicking a column header will change the sorting according to the column criteria.

Automatic LCN assignment:

- Click the **automatic LCN assignment** button.

→ The LCNs will be assigned in the order of the sorting.

Manual LCN assignment:

- Click to a service in the table.

→ The service is shown in section "LCN assignment" on the right side.


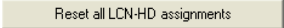
- Enter a LCN or (at HD channels) a LCN HD in the corresponding input field and click the Accept change button.

- > Due to the differentiation of LCN and LCN HD it is possible to assign the same channel number for a channel transmitted in "SD" and "HD" quality. Suited "HD" receivers will prefer the services in "HD" quality, "SD" receivers will use the service in "SD" quality.
- > The assigned LCN is shown in the table on the left side.

Visible Service Flag:

This setting must be set to "on" if a receiver should find the service during a station search. Setting "off" - for example - is used for channels used for software update only.

Reset all LCNs / LCN-HD assignments:

- Click at the corresponding button  or .

—> All assigned LCNs will be deleted in the table.

Reset individual LCNs / LCN-HD assignments:

- Click to a service in the table.

—> The service is shown in section "LCN assignment" on the right side.


- Click to the  button next to the LCN.

—> The assigned LCN will be deleted in the table.

Remove individual services:

- Click to a service in the table.


—> The service is shown in section "LCN assignment" on the right side.

- Click to the  button.

—> The service will be deleted in the table.

Add individual services:

In section "LCN assignment" individual services not included in the table can be added via tab "Add service".

- Enter the corresponding TS- and ON-ID as well as the SID and the desired LCN (HD). Enter a service name.
- Click the  button.

Add service

TS-/ON-ID [Hex]:

SID [Hex]:

LCN [1-999 | 9999]:

LCN HD [1-999 | 9999]:

Visible Service Flag:


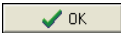
Visible Service Flag HD:

Service name


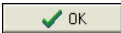
Box doesn't save name!
Used by LCN-export to *.gsl/*.txt.

—> The added service is shown in the table on the left side.


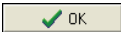
Save a LCN list:

- Select menu item **File > save LCN** or click the  button.
- Enter file name and location.
- Click the  button.

Export a Service (LCN) list as a text file:

- Select menu item **Export > Export service list** or click the  button.
- Enter file name and location.
- Click the  button.

Open a saved LCN list:


- Select menu item **File > open LCN** or click the  button.
- Select the corresponding file.
- Click the  button.

—> The current LCN list will be overwritten.

Close the LCN menu:

- Close the menu via the menu item **Back** or buttons  / .

Send the NIT to the plant:

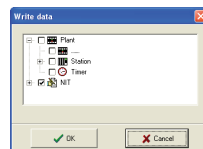
- Send the NIT to the plant with button .

—> NIT is switched ON at all cassettes.

Do not modify the selection!

So it is ensured that all necessary data will be sent.

- Click the  button.



—> Attention: Creating a NIT at the menu of the cassette using the control unit all existing LCNs will be deleted!

Close the menu:

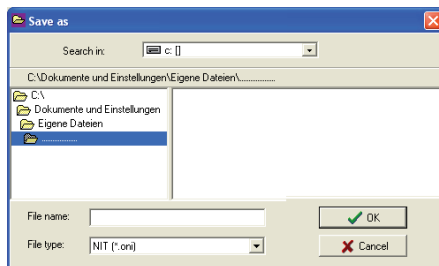
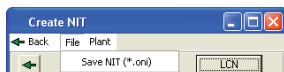
- Close the menu via the menu item **Back** or buttons  / .

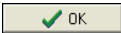
SAVE THE NIT

Via this menu the NIT can be saved - **LCN settings included**.

—> Via this function it is possible to save the NIT of a plant in form of an ".oni" file, in order to import it into another plant.

- Select menu item **File > Save NIT** in the "Create NIT" menu.



- Enter a file name, select the target directory and save the file using button .

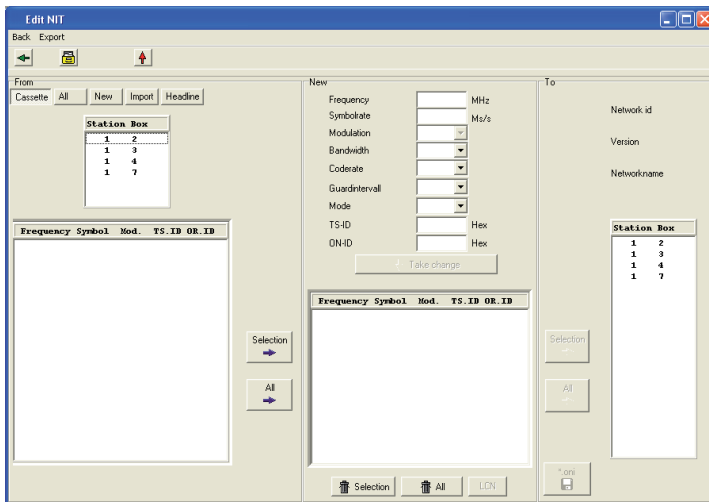
—> Via the menu **Edit > Copy NIT** (page 46) of the **CCRS 1000** the saved NIT can be imported into another plant.

EDIT NIT (NETWORK INFORMATION TABLE)

Via this menu the NIT can be modified.

- For the majority of all plants it is sufficient to create a NIT "automatically" via menu item "Create NIT". **Using menu item "Edit NIT" creates a new NIT "manually"**. It is e.g. possible to remove transponders from the NIT. These transponders potentially will not be found during station search of receivers. It is also possible to add transponder from "older" cassettes not implied in the NIT automatically.
- **Make only modifications if you are aware of its consequences.**
- The modifications will be done – as all settings via CCRS 1000 – first in the programme (RAM). The new (modified) NIT must finally be sent to the plant.

- Select menu item **Edit > Edit NIT**.





The "Edit NIT" menu consists of three sections:

- **"From"** – herein the contents of the NIT will be selected.
- **"New"** – herein the contents will be collected, modifications are possible.
- **"To"** – herein the targets of the new NIT will be selected. The NIT can be saved in form of an ".oni" file.

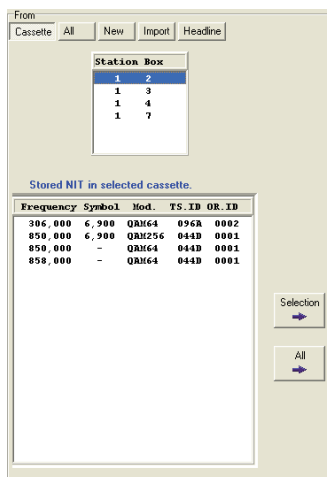
SECTION "FROM" > CASSETTE:

—> All cassettes able to transmit a NIT will be shown.

The **NIT of a selected cassette** will be shown below.

- Click to button  in order to transfer all listed transponders to section "New", or
- select individual transponders in order to transfer only the selection using button  to section "New".

—> Transponders not transferred to section "New" will not be part of the new NIT and will possibly not found during station search of a receiver!





From
Cassette | All | New | Import | Headline

Station Box	
1	2
1	3
1	4
1	7

Stored NIT in selected cassette.



Frequency	Symbol	Mod.	TS_ID	OR_ID
306,000	6,900	QAM64	076A	0002
850,000	6,900	QAM256	044B	0001
850,000	-	QAM64	044B	0001
850,000	-	QAM64	044B	0001

Selection 

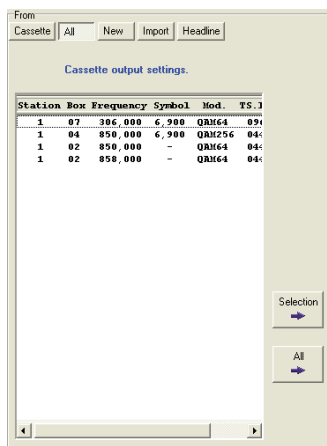
All 

SECTION "FROM" > ALL:

- > The **transponder data (not the NIT!)** of all cassettes transmitting a NIT will be shown.
- > If you would like to check/modify a still modified NIT again, you have to select the NIT via the tap "Cassette"!

- Click to button  in order to transfer all listed transponders to section "New", or
- select individual transponders in order to transfer only the selection using button  to section "New".


—> Transponders not transferred to section "New" will not be part of the new NIT and will possibly not found during station search of a receiver!




From
Cassette | All | New | Import | Headline

Cassette output settings.

Station Box	Frequency	Symbol	Mod.	TS_ID
1	07	306,000	6,900	QAM64 094
1	04	850,000	6,900	QAM256 044
1	02	850,000	-	QAM64 044
1	02	850,000	-	QAM64 044


Selection 

All 

SECTION "FROM" > NEW:

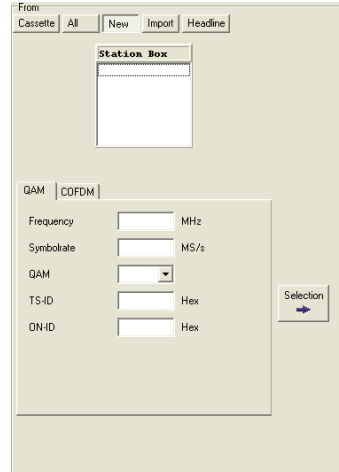
—> Transponders of older cassettes which are not transmitting a NIT and transponders of external components can be added to the NIT manually. As it is not possible to transmit the "new" NIT to external components, the NIT must be switched off at all of this components in order to avoid two different NITs.




Older cassettes which are not transmitting a NIT are shown in window "Station Box".

- Dependent on the cassette click to the buttons QAM or COFDM and enter the data of the transponder.
- Click to button  in order to transfer the transponder to section "New".

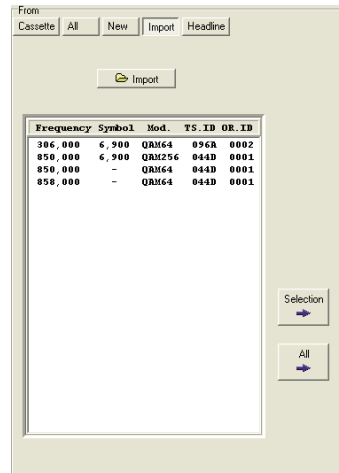
—> The transponder data can be complemented in section "New".

—> For adding several transponders repeat this procedure accordingly.


SECTION "FROM" > IMPORT:

- In order to import a saved (exported) NIT click to button .
- Click to button  in order to transfer all listed transponders to section "New", or
- select individual transponders in order to transfer only the selection using button  to section "New".

—> Transponders not transferred to section "New" will not be part of the new NIT and will possibly not be found during station search of a receiver!



Frequency	Symbol	Mod.	TS-ID	OR-ID
366,000	6,900	QAM64	096A	0002
850,000	6,900	QAM256	044D	0001
850,000	-	QAM64	044D	0001
850,000	-	QAM64	044D	0001

—> This function is useful if a plant e.g consists of four stations, remote controlled via two CCRC 2 management units.
In order to create a NIT for the complete plant, first create a NIT for the 2 stations controlled by the 1st CCRC 2. Export this NIT (page 45) and after that import it into the NIT of the both stations of the 2nd CCRC 2. This NIT contains the transponders of all 4 stations. Transmit the NIT into all cassettes of both stations of the 2nd CCRC 2 (page 44). Now this NIT must be exported and after that imported into both stations of the 1st CCRC 2. Now all four stations contain identical NITs.

SECTION "FROM" > HEADLINE:

In this menu you can modify the "Network ID", the "Version" and the "Network name" (like in menu "Create NIT" page 33). Normally nothing must be modified.

- At special applications enter the specific values.

—> Incorrect values may result in malfunction!

The screenshot shows the 'Headline' menu. At the top, there is a 'Station Box' table with two columns, 1 and 2. The table contains the following data:

1	2
1	3
1	4
1	7

Below the table, there are three input fields with labels and 'Hex' indicators:

- Network id: Hex
- Version (max 0x1F): Hex
- Networkname:

—> Proceed with section "New".

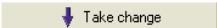
SECTION "New":

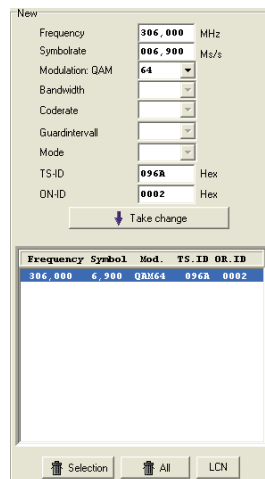
All transponders selected in section "From" will be listed in the lower part of the window.

—> In this section e.g. you can modify transponders, added in section "From > New".

- Select a corresponding transponder of the list.


—> In the upper part of the window the already entered data are shown.


- Modify the data of the corresponding transponder if necessary.
- Take over the modifications with button  into the list.




Frequency	Symbol	Mod.	TS_ID	OR_ID
306.000	6.900	QAM64	096A	0002

—> In the lower part of the window you see all transponders, contained in the "new" NIT.

Via button  selected transponders can be removed from the NIT.

Via button  all transponders can be removed from the NIT.

Via button  the menu LCN (Logical Channel Numbers) will be opened, to preset "Channel Numbers" (see "Logical channel numbers" page 34).

—> Now the "new" NIT is created and can be transmitted to selected cassettes (beware!) or all cassettes (recommended).

SECTION "To":

All cassettes which can transmit a NIT are listed in the right window.

—> In this section you can transfer the "new" NIT, created in section "New" to selected cassettes (beware!) or all cassettes (recommended).

- In order to transfer the NIT to all cassettes (recommended) click to button .

—> The NIT will be transferred from section "New" to all cassettes.

—> Section "New" gets "empty".

—> To check the new NIT select a cassette in section "From" —> its NIT is shown.


To


Network id
EF7F



Version
00


Networkname
GSS

Station Box	
1	2
1	3
1	4
1	5
1	7
1	9

Selection 

All 


 

- In order to transfer the NIT to a selection of cassettes (beware!) activate the "target" cassettes in the right window and click to button .

—> The NIT will be transferred from section "New" to all activated cassettes.

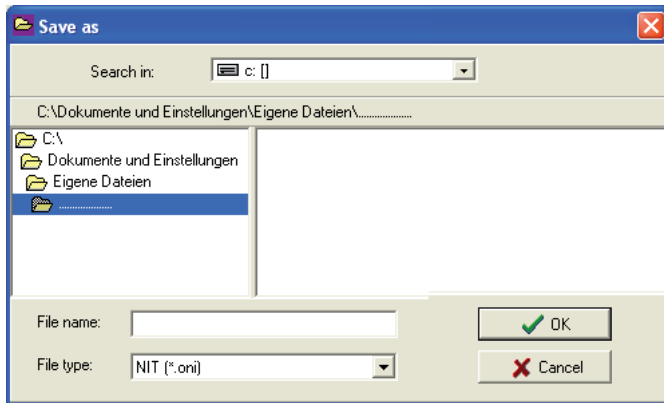
—> Section "New" gets "empty".


—> To check the new NIT select a cassette in section "From" —> its NIT is shown.

—> The modifications will be done – as all settings via CCRS 1000 – first in the programme (RAM). The new (modified) NIT must finally be sent to the plant. .

When the transfer is finished button  is activated.

- With a click on this button it is possible to save the NIT in form of an ".oni" file - **LCN settings included**.


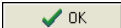


- Enter a file name, select the target directory and save the file using button .

—> Via the menu **Edit > Copy NIT** (page 46) of the **CCRS 1000** the saved NIT can be imported into another plant.

EXPORT:

—> This function exports the data shown in section "From". If "**Cassette**" is selected, the **NIT of the selected cassette** will be exported. If "**All**" is selected, the "**Output settings**" of all cassettes (not the NIT) will be exported. **LCN setting will NOT be exported**. As there should exist only one NIT per plant, both functions should produce an identical result.

- Select menu item **Export** or click to button .
- Enter file name and location.
- Click the  button.

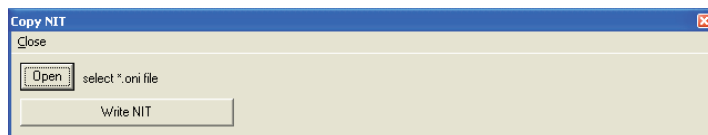
Close the menu:

- Close the menu via the menu item **Back** or buttons  / .

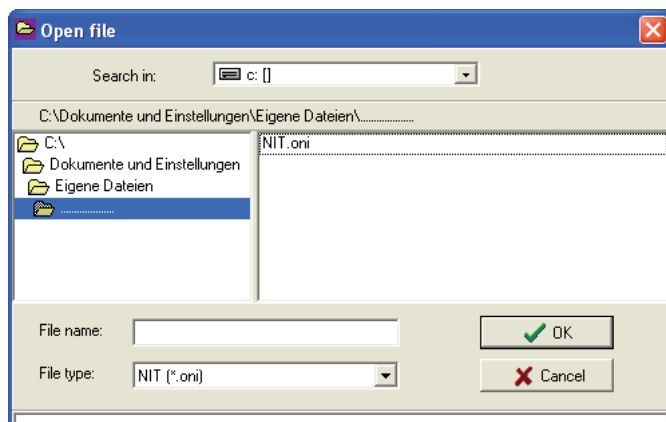
COPY NIT

Via this menu a NIT saved in form of an ".oni" file can be imported.

- Select menu item **Edit > Copy NIT**.



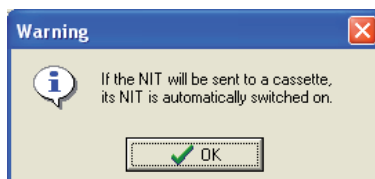
- Open the selection window using button .




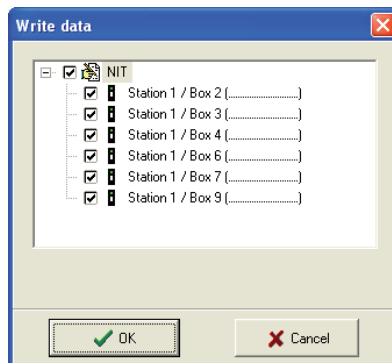
- Select the corresponding ".oni" file from the source directory and click on button .

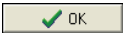


- Import the NIT using button .

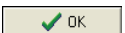


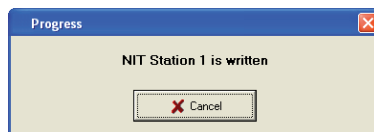
- Confirm the warning with button .



- In order to transfer the NIT to all cassettes (recommended) click to button  .

—> By default all cassettes able the output a NIT are activated.

- In order to transfer the NIT to a selection of cassettes (beware!), deactivate the cassettes which shall not receive the NIT and click to button  .




—> The NIT will be transferred to all activated cassettes, whose function NIT will be set to "on".


TIMER

Via this menu the output of analogue cassettes which support this function can be switched on and off - time controlled.

—> For this function a management system is required.

- Select menu item **Edit > Timer**.


- > This function can also be selected by button  or the context menu (right mouse button).
- > This function is controlled by the management unit, so any changes must be transferred to the management unit.
- > The plant must contain a cassette which can forward the time to the management unit (timing circuit).
- > A maximum of 100 timers are possible.

Timer									
Back Edit									
 Timing circuit: Station 1 / Box 1 A / ... / 048,25 MHz /									
Pos	Timer	Time	Days	Output	Station	Box	Type	Frequency	Transmittername
1	ON	18:00:00	M T W T F _ _	ON	1	1A	...	48,250 MHz	
2	ON	20:00:00	M T W T F _ _	OFF	1	1A	...	48,250 MHz	


DEFINE A TIMING CIRCUIT:

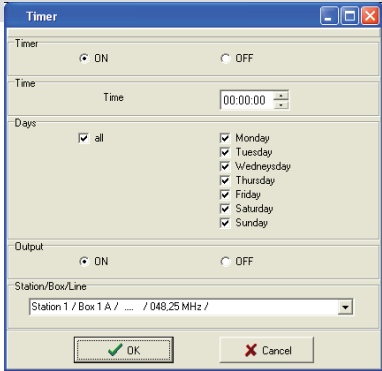
In the selecting menu "Timing circuit:" all cassettes are shown which can forward the time to the management unit.

- > The following cassettes are possible timing circuits:
CCS 2370, CCS 1231, CCS 1233, CCS 1234, CCS 1235

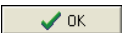
- Select the desired timing circuit in the selecting menu with button .

DEFINE A NEW TIMER:


- Open the menu "Timer" via **Edit > New Timer** or button .
- Activate (ON) or deactivate (OFF) the timer in section "Timer".
- Enter the time and the days the timer is desired.
- In section "Output" select, whether the timer should switch on or off the output of the cassette.



—> Only one switching operation is possible for each timer. In order to switch a cassette on and off, two timers must be defined.

- In section "Station/Box/Line" select the cassette (and the output line A or B), to be switched.
- Confirm the timer with button .

EDIT A TIMER:


- Click into the line of the timer to be edited. The corresponding field is activated.
- Open the menu "Timer" via **Edit > Edit selection** or button .

Pos	Timer	Zeit
1	ON	18:00:00
2	ON	20:00:00

—> Alternatively select item "Edit selection" in the context menu (right mouse button).

- Edit the settings and confirm the changes with button .



DELETE TIMER:

- Click into the line of the timer to be deleted. The corresponding field is activated.
- Delete the timer via menu item **Edit > Delete timer** or button .

—> Alternatively select item "Delete timer" in the context menu (right mouse button).

Sort timer:

With this function the sequence of the timer in the overview can be changed.

- Click into the line of the timer to be shifted.
The corresponding field is activated.
- Shift the timer selected upwards or downwards by menu item **Edit > Up / Down** or with buttons  .

—> Alternatively select item "Up / Down" in the context menu (right mouse button).

Close the timer menu:

- Close the menu via the menu item **Back** or buttons  / .

—> This timer function is controlled by the management unit, so any changes must be transferred to the management unit.

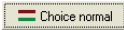
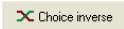
SPECTRUM I/Q

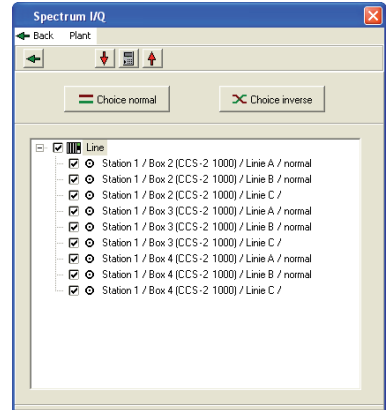
Via this menu you can invert the spectral position of the user signal.

- Select menu item **Edit > Spectrum I/Q**.

—> This function can also be selected by the context menu (right mouse button).

In the menu the lines of all cassettes are listed, possible to set the spectral position.


- Via the check boxes select from which lines you would like to change the spectral position (check box marked).
- Use button  in order to switch the selected lines to spectral position "normal".
- Use button  in order to switch the selected lines to spectral position "inverse".



—> This function is also possible in the output settings of the corresponding cassettes.

—> **The changes are only effective when they were sent to the plant** .

Close the menu:

- Close the menu via the menu item **Back** or buttons  / .


MTP FUNCTION

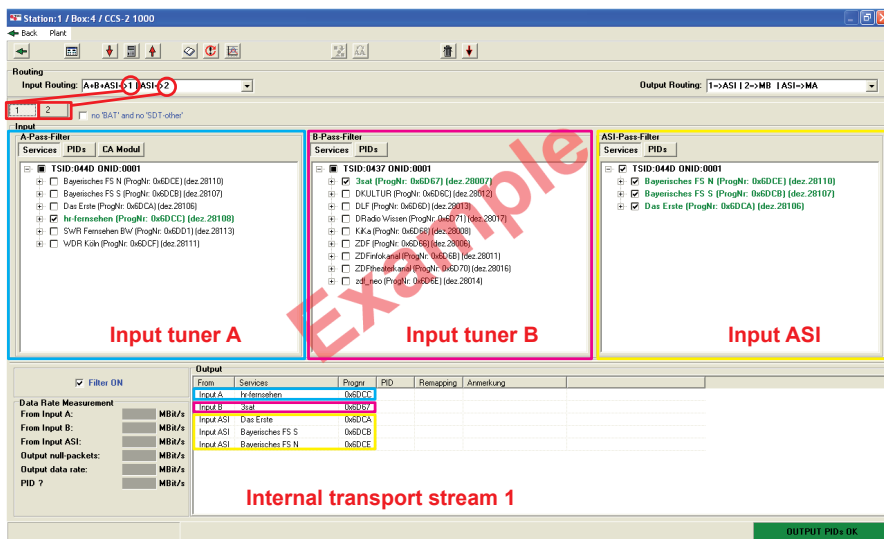
—> The cassette must support this function.

As the settings (and therefore the menus) of the individual cassettes are quite different, cassette CCS-2 1000 is described exemplary in this instruction.

Via this menu you can set the input and output routing as well as e.g. the filtering of the services and PIDs (dependent on the type of cassette).
SIDs and PIDs are shown hexadecimal and decimal.

- Select the cassette to be set in the left window (tree structure).
- Select menu item **Edit > MTP Function**.

—> This function can also be selected by button  or the context menu (right mouse button).



Routing
Input Routing: A+B+ASI-1 ASI-2
Output Routing: 1->ASI 1 2->MB 1 ASI->MA

Input

A-Pass-Filter
Services PIDs CA Modul
☐ TSID:0440 ONID:0001
☐ Bayerisches FS W (ProgNr: 0x6DCE) (dez.28110)
☐ Bayerisches FS S (ProgNr: 0x6DCB) (dez.28107)
☐ Das Erste (ProgNr: 0x6DCA) (dez.28108)
☒ hr-fernsehen (ProgNr: 0x6DCC) (dez.28109)
☐ SWR Fernsehen BV (ProgNr: 0x6DD1) (dez.28113)
☐ WDR Köln (ProgNr: 0x6DC7) (dez.28111)

B-Pass-Filter
Services PIDs
☒ TSID:0437 ONID:0001
☐ 3sat (ProgNr: 0x6D67) (dez.28097)
☐ DKULTUR (ProgNr: 0x6D6C) (dez.28072)
☐ DLF (ProgNr: 0x6D62) (dez.28073)
☐ DRadio Wissen (ProgNr: 0x6D71) (dez.28077)
☐ Kika (ProgNr: 0x6D64) (dez.28080)
☐ ZDF (ProgNr: 0x6D68) (dez.28086)
☐ ZDFinfo (ProgNr: 0x6D6B) (dez.28091)
☐ ZDFinfo2 (ProgNr: 0x6D70) (dez.28096)
☐ zdfneo (ProgNr: 0x6D6E) (dez.28094)

ASI-Pass-Filter
Services PIDs
☒ TSID:0440 ONID:0001
☐ Bayerisches FS W (ProgNr: 0x6DCE) (dez.28110)
☒ Bayerisches FS S (ProgNr: 0x6DCB) (dez.28107)
☒ Das Erste (ProgNr: 0x6DCA) (dez.28108)

Output

From	Services	ProgNr	PID	Remapping	Anmerkung
Input A	hr-fernsehen	0x6DCC	0x6DCC		
Input ASI	Das Erste	0x6DCA	0x6DCA		
Input ASI	Bayerisches FS S	0x6DCB	0x6DCB		
Input ASI	Bayerisches FS W	0x6DCE	0x6DCE		

Data Rate Measurement
 From Input A: MB/s
 From Input B: MB/s
 From Input ASI: MB/s
 Output null-packets: MB/s
 Output data rate: MB/s
 PID 7: MB/s

Internal transport stream 1


OUTPUT PIDs OK

SECTION "ROUTING":

In this section the input and output routing can be adjusted.


—> Input routing (INROUTE) = the distribution of the input signals to the (internal) transport streams 1 and 2. "A+B+ASI=>1 | ASI=>2" means: Tuner input A + tuner input B + ASI input is switched to internal transport stream 1, in addition the ASI input is switched to internal transport stream 2.

- Select the desired setting:

e.g. **Input Routing:** 

—> Output Routing (OUTROUTE) = the distribution of the (internal) transport streams 1 and 2 and the ASI input to the outputs. "1=>ASI | 2=>MB | ASI=>MA" means: Transport stream 1 is switched to the ASI output, transport stream 2 to modulator B and the ASI input is switched to modulator A.

- Select the desired setting:

e.g. **Output Routing:** 

Via check box ☒ **no 'BAT' and no 'SDT-other'** the "BAT" and "SDT-other" tables can be filtered out (for both internal transport streams).

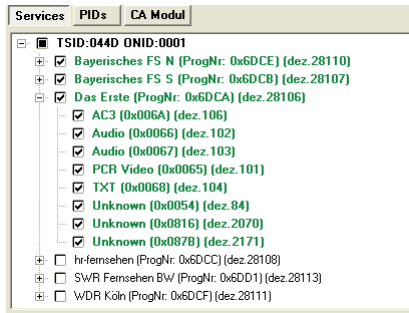
SECTION "INPUT":

Via the tabs "**Services**" and "**PIDs**" the service and PID filter settings for the (internal) transport streams 1 and 2 can be done. Tab "**CA Modul**" (transport stream 1) contains the filter settings (the services to be descrambled) and the settings of a CA module.

- Select transport stream 1 or 2 via buttons .

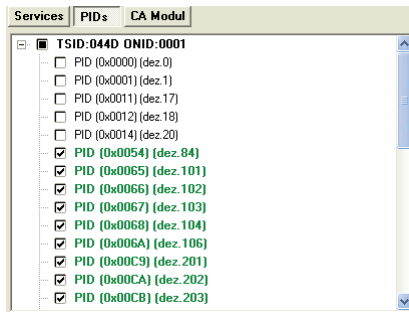
—> The windows in section "Input" (e.g. A-Pass-Filter) are dependent on the settings of "Input Routing".



- In tab "**Services**" select the services to be transmitted.



- In order to save bandwidth, PIDs can be deselected (e.g. the PIDs of languages not needed).
- The individual PIDs are arranged below the corresponding channel.


In tab "**PIDs**" all PIDs are listed in ascending order without an assignment to a channel.



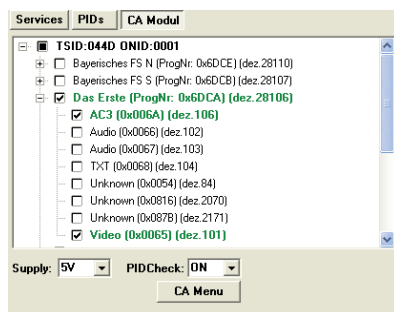
- If filters will be activated in tab "Services", these filters are also activated in tab "PIDs" (and vice versa).
- Therefore also observe the functions "Add a new PID"  and "Remap a PID"  on page 60.
- If filters for Services and PIDs are set, first only the setting of the filters will be transmitted to the cassette.



The filters are not activated until the "Filter ON" check box ☒ **Filter ON** is activated (separately for transport stream 1 and 2  ) and also these settings are transmitted to the cassette .

- Without activated filters all services/PIDs will be transmitted.
- We recommend to perform a cassette reset  after a successful transmission

If a cassette contains a CA module, in tab "**CA Modul**" the corresponding filter settings (the services to be descrambled) as well as the settings of the CA module can be done.



- Select the services to be descrambled.

—> If a service can not be descrambled, as e.g. the number of PIDs to be descrambled by the CA module are exhausted, PIDs of e.g. not needed languages can be deselected, to get free capacities.

Via selection field "**Supply**" dependent on the cassette (and its software version) the power supply of the CA module can be switched over from 5V to 3.3V.

—> Power supply switching of "newer" cassettes will be done automatically. If the cassette does **not** have the control menu "Supply",

Bx 4A	CA
Supply	5.0 V


the selection field "Supply" is **out of order**.

—> Please also observe the operating instructions of the CA module.

Via selection field "**PIDCheck**" the PID monitoring can be switched OFF.

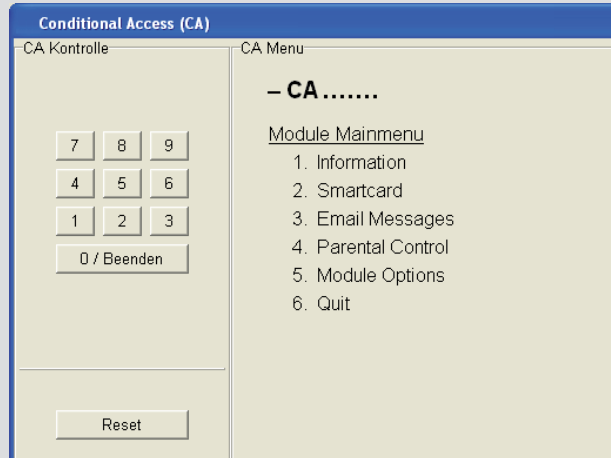
—> By default PID monitoring is switched ON. If particular PIDs are not descrambled the CA module is reset. If dropouts occur during the descrambling of several stations the PID monitoring can be switched off.

Configuration of the CA module:

—> A connection to the plant must be activated ( Online).

- Click on button **CA Menu**.

—> This menu depends on the CA module used. Therefore please observe the operating instruction of the CA module. The following figure is exemplary.








—> The menu items are numbered in section "CA Menu".

- Click on the corresponding numbered button in section "CA Control" in order to select a menu item.

SECTION "OUTPUT":


Herein you get a summary of the selected filters in section "Input" of the corresponding internal transport stream independent on whether the filters are activated.

TOOLBAR:

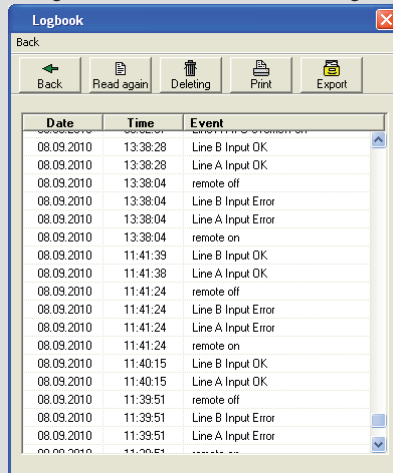
The functions of buttons , ,  and  (as well as of the submenu "Plant") are described in main menu "Plant" (page 25), button  is described in submenu "Edit > Data settings" (page 29).

LOGBOOK


Using this button the log file of the cassette can be shown.




- Click on button .


- The cassette must support this function.
- Failures and incidents of the cassette are recorded together with date and time (e.g. missing input signal, reset or remote configuration of the cassette). These incidents are shown in the menu window after read out.
- Saving the configuration will also save the log file.



- Click to button  in order to read the current log file.

- A connection to the plant must be activated ( Online). Otherwise menu "connection settings" appears, in order to activate a connection.




- Click to button  in order to print the log file.
- Click to button  in order to export the log file.
- Click to button  in order to delete the log file in the cassette.

- A connection to the plant must be activated (). Otherwise menu "connection settings" appears, in order to activate a connection.

DATA RATE MEASUREMENT

Via this function the input and output data rates of cassettes can be displayed.



- Activate button .

- The cassette must support this function.
- A connection to the plant must be activated (). Otherwise menu "connection settings" appears, in order to activate a connection.
- The data rates are displayed in section "Data Rate Measurement" and will be updated continuously ( is flashing) until  is deactivated.

Data Rate Measurement	
From Input A:	9,674 MBit/s
From Input B:	9,674 MBit/s
From Input ASI:	13,163 MBit/s
Output null-packets:	8,807 MBit/s
Output data rate:	22,861 MBit/s
PID ?	MBit/s

- The data rates of the inputs A, B and ASI are shown. In addition it is possible to read the data rates of the output and the null-packets. In order to get the data rate of a single PID mark the PID in the input window – then its data rate is shown at "PID ?".
- Changes (e.g. of the filter settings) will take effect in measuring not before they are transmitted to the cassette (with activated filters).

RESET FILTER SETTINGS ("CLEAR OUTPUT LIST")

Via this function the filter settings of the corresponding transport stream 1 or 2 ( ) can be reset.

- The "Filter ON" setting will not be reset!

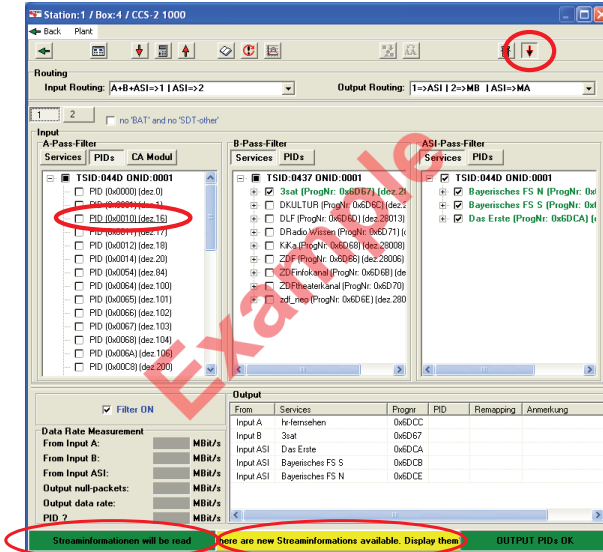
☒ Filter ON


If you do **not** set new filter settings after a reset at activated "Filter ON" setting all services are disabled!

↓ READ STREAM INFORMATION


Via this function changes in the stream information can be shown.

- Activate button .



- A connection to the plant must be activated ().
- Otherwise menu "connection settings" appears, in order to activate a connection.
- **Streaminformationen will be read** is flashing.
- If any changes are registered, **There are new Streaminformations available. Display them?** is displayed.

- Click to button **There are new Streaminformations available. Display them?** in order to show the changes.


- For example an additional PID is shown "underlined".
- Note that some PIDs will not be transmitted permanently but in intervals of some seconds. This will cause in regular notifications of changes.
- The stream information will be shown until button  is deactivated.

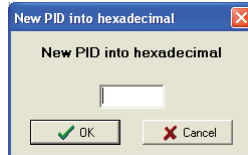
ADD A NEW PID

Via this function a new PID can be created.

- Click to any PID of the list which should be complemented by the new PID.

—> Button  becomes "active".

- Click to button .




- Enter the new PID as a hexadecimal value.

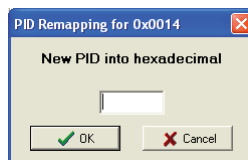
—> The new PID will be added to the list at the corresponding position (red type).

REMAP A PID

Via this function a new PID can be remapped.


—> The check box of the PID must be deactivated.

- Click at the PID to be remapped (e.g. ☐ PID (0x0012) (dez.18)).
- Click to button .



- Enter the new PID as a hexadecimal value.

—> The "new" PID will be added behind the "old" PID ("old" PID —> "new" PID) ☐ PID (0x0012) (dez.18) -> (0x0013).

—> **The changes are only effective when they were sent to the plant** .

Close the menu:

- Close the menu via the menu item **Back** or buttons  / .

PLANT SETTINGS

Configure a management unit via this menu.

—> For a connection via COM port (in situ connection) no plant settings are necessary.

- Select menu item **Edit > Plant settings**.

—> This function can also be selected by the context menu (right mouse button).

Plant settings

Station data

IP-Adresse : Port Location of the plant Street of the plant

CCRC: ☐ CCMC available

Password

New password

Repeat password

STATION DATA:

- Herein enter data of the plant.

Station data		
IP-Adresse : Port 192.168.0.120:60002	Location of the plant Example Town	Street of the plant Example Street
CCRC: CCRC 2	<input checked="" type="checkbox"/> CCMC available	

—> This data are for information only and will be shown when a saved configuration will be opened in the open dialogue and transmitted in error messages.

This helps to keep track if you have to manage several plants.

- Select your management unit in drop-down menu **"CCRC"**.

—> Dependent on your selection only needed configuration fields are enabled.


- Activate the check box beside **"CCMC available"** if a monitoring cassette is used in your plant.


—> Only with this check box activated the settings for error messages are enabled.

TAB "PASSWORD":

Herein you can enter a password for the remote access to the plant if a management unit is selected.

—> This password will be asked for when establishing a connection. By default no password is assigned.

- Enter your desired password in field **"New Password"**.
- Enter your desired password in field **"Repeat password"** again.
- Click to button  Saving password in order to save the password.

—> Using button  Test password you can check the password, before you terminate the connection.

TAB "MODEM":

If a management unit is connected via modem, the connection settings needed are to be done in this tab.

- Select the kind of modem connected to the management unit. If GSM modem (Handy) is selected enter the pin number of its telephone card in field "Pin number".
- Select "Direct connection" or "Data recall".
At "Direct connection" the plant answers the telephone call.
At "Data recall" the plant does not answer the telephone call, but tries to identify the phone number and calls back. Enter the number to be called back in field "Phone number" if an identification of the number does not work.

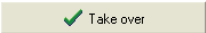
TAB "ETHERNET":


If a management unit is connected via LAN, in section "Settings" all network settings needed are to be done.

- > For connection via Internet (especially for remote maintenance) network knowledge is required. If you are not familiar with the terms in section "Settings" please contact your system administrator.
- > The management unit is preset in the factory:

	CCRC 2
IP:	192.168.0.120
Mask:	255.255.255.0
Port:	60002
Gateway:	192.168.0.1
HTML Port:	80

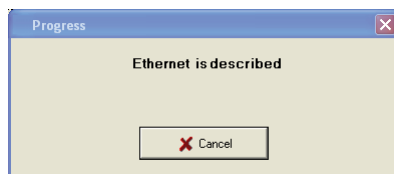
- > If a different IP address range is used in the network the plant is installed or the preset IP address is already in use, the settings must be changed accordingly. Therefore observe the assembly instruction of the management unit.
- > Only use ports in the range of 35000 – 60100 or 61000 – 65000!

- Enter the settings required for the network (the plant is installed).
- Click to button 

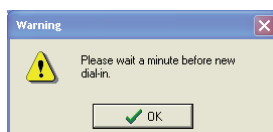
- > A connection to the plant must be activated (). Otherwise menu "connection settings" appears, in order to activate a connection.



- Enter the password (default is "TRIAX").



—> The management unit restarts (ca. 1 minute).



The Ethernet password can be changed in section "Enter ethernet password".

- Enter the desired password in field "**New password**" and (for confirmation) in field "**Repeat password**".
- Click to button  Take over.

—> Like in section "Settings" the modification will be transmitted directly to the management unit.

TABS FOR THE ALARM SETTINGS:

The remaining tabs help configuring the alarm messages. Therefore a monitoring cassette CCMC 6000 must be installed. The check box "CCMC available" must be activated in section "Station data".

Station data		
IP-Adresse : Port	Location of the plant	Street of the plant
192.168.0.120:60002	Example Town	Example Street
CCRC: CCRC 2	<input checked="" type="checkbox"/> CCMC available	

—> Alarm settings can be tested with menu item "Options > Management unit > Test alarm report" (page 80)

TAB "ALARM SETTINGS":

Herein enter the time interval from the appearance of an error until the error message will be sent as well as the language of the error message.

TAB "ALARM MODEM":

(only CCRC 8)

If a management unit is connected via modem, all settings to send an error message as SMS or fax are to be done in this tab.

Alarm Modem

Alarm 1 Alarm 2 Alarm 3

☐ Alarm 1 active

Phone number of the receiver

Country code: National phone number:

Provider settings:

Alarm report to: ☒ SMS ☐ FAX ☐ Pager(Cityruf) Fax to SMS format: ☒ TAP ☐ UCP

Provider service number: Provider qualifier SMS to Fax:

Three recipients for error messages can be entered (Alarm 1, 2 and 3).

- Activate button "Alarm 1".
- In section "Phone number of the receiver" enter the "Country code" (e.g. 0049 for Germany) and the "National phone number" (e.g. 0891234).
- In section "Provider settings" select whether the message should be sent as a SMS, a fax or to a pager and select the transmission format supported by the provider (TAP or UCP). Enter the service number (SMSC) of the provider and its qualifier if a SMS should be converted into a fax.
- Activate the alarm with check box "Alarm 1 active".

—> The alarms 2 and 3 will be set analogous to alarm 1.

TAB "ALARM E-MAIL":(only CCRC 2)

If a management unit is connected via LAN, all settings to send an error message as e-mail are to be done in this tab.

E-mail settings		E-mail addresses	
Provider	smtp.example.de	active	
User	example@example.de	<input checked="" type="checkbox"/>	help1@example.de
Password	password	<input checked="" type="checkbox"/>	help2@example.de
Subject	Malfunction	<input checked="" type="checkbox"/>	help3@example.de
		<input type="checkbox"/>	help4@example.de
		<input type="checkbox"/>	help5@example.de

- In section "E-mail settings" enter the data needed in order to send an e-mail via your e-mail account:
 - Provider: SMTP server address of the provider.
 - User: Your e-mail account address.
 - Password: Your password needed in order to send e-mails.
 - Subject: Individual text

—> Standard SMTP port 25 is used to send e-mails.

- Enter up to 5 recipient e-mail addresses in section "E-mail addresses" which should receive the error message.
- Activate the e-mail addresses via the corresponding check box.

TAB "ALARM SNMP-TRAPS":(only CCRC 2)

If a management unit is connected via LAN, all settings to send an error message as SNMP Inform Request are to be done in this tab.


active	IP-address
<input checked="" type="checkbox"/>	192.168.0.142:162
<input checked="" type="checkbox"/>	192.168.0.143:162
<input type="checkbox"/>	192.168.0.189:162

Enter up to 3 IP addresses which should receive the error message and activate them via the corresponding check box.

—> In case of an error message it will be sent to the activated IP addresses as SNMP Inform Request.

See below the structure of the error message:

```
Seq {
  Int = 1; SNMP Version
  Str = public; Community String
  Inform {
    Int = 6; RequestId
    Int = 1; Error
    Int = 0; ErrorIndex
    Seq {
      Seq {
        OID = 1.3.6.1.4.1.29343.1.0.0.1
        Str = Alarm report: 1 Channel in Nuremberg (Tel.: 212.20.172.90:60003) been cancelled
      }
    }
  }
}
```


—> The changes are only effective when they were sent to the plant .

MONITORING CASSETTE

Via this menu a connected monitoring cassette can be configured.

Using a monitoring cassette the output signals of a broadband cable system in the frequency range of 47 – 862 MHz can be monitored. Furthermore an info channel is feed into the cable system displaying the channel assignment.

The monitoring cassette must be assembled according to its assembly instruction, a channel search must be done.

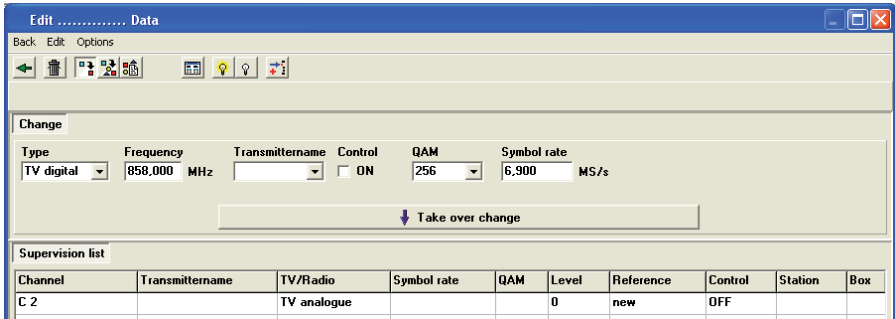
- Read the data of the monitoring cassette .
- Select menu item **Edit > Monitoring cassette**.



- > In section "Supervision list" the output signals found during the channel search of the monitoring cassette are shown.
Via menu "Edit" channels can be added from a list or manually, changed or deleted.
- > Only PAL, FM and DVB-C, but no DVB-T channels can be monitored.

CHANGE TRANSMITTER

- Select menu item **Edit > Change transmitter** or click on button .



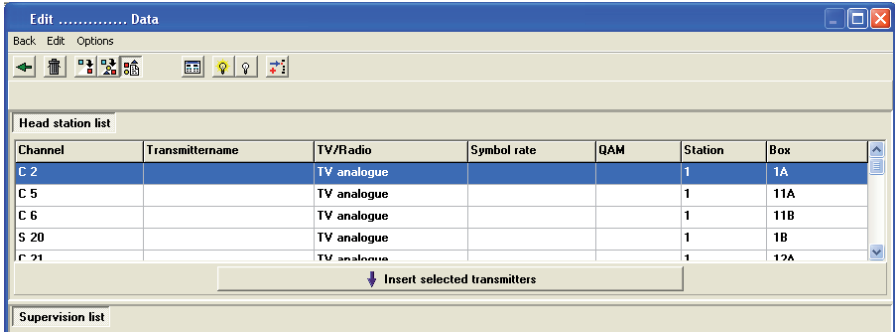
Channel	Transmittername	TV/Radio	Symbol rate	QAM	Level	Reference	Control	Station	Box
C 2		TV analogue			0	new	OFF		

- Activate the transmitter to be changed in the supervision list.
- Enter the changes in section "Change".
- Take over the modified channels into the "Supervision list" using button

↓ Take over change

INSERT TRANSMITTER FROM HEAD STATION

- Select menu item **Edit > Insert from head station** or click on button .



Channel	Transmittername	TV/Radio	Symbol rate	QAM	Station	Box
C 2		TV analogue			1	1A
C 5		TV analogue			1	11A
C 6		TV analogue			1	11B
S 20		TV analogue			1	1B
C 21		TV analogue			1	12A

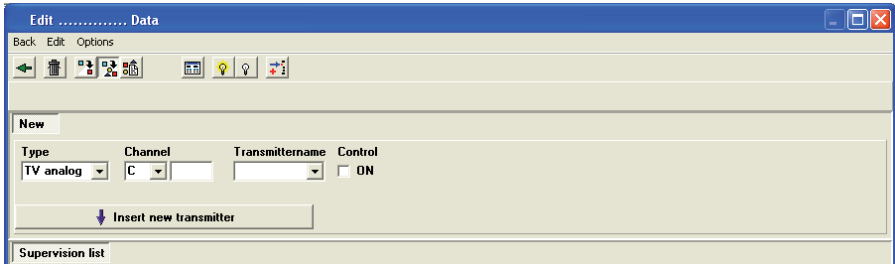
—> All transmitters of the head-end station are displayed in the "Head station list".

- Select all transmitters to be monitored in the "Head station list" and insert them into the "Supervision list" using button

↓ Insert selected transmitters

NEW TRANSMITTER

- Select menu item **Edit > New transmitter** or click on button .



The screenshot shows a window titled "Edit Data" with a menu bar (Back, Edit, Options) and a toolbar. The "New" section contains four fields: "Type" (dropdown menu showing "TV analog"), "Channel" (dropdown menu showing "C"), "Transmittername" (text input field), and "Control" (checkbox labeled "ON"). Below these fields is a button labeled "Insert new transmitter". At the bottom of the window is a section labeled "Supervision list".


- In section "New" enter "Type", "Channel" and the transmitter name. If "Type" is set to "TV digital" the kind of modulation (QAM 4...256) and the symbol rate must be entered. Activate check box "ON" in order to monitor a transmitter.
- Insert the transmitter into the "Supervision list" using button


 Insert new transmitter

DELETE TRANSMITTER

- Activate the transmitter to be deleted in the "Supervision list".
- Select menu item **Edit > Delete transmitter** or click on button .



REFERENCE LEVEL

In order to monitor level variations first reference levels must be stored. When the data of the monitoring cassette is read () also the current levels of the transmitters are read (column "Level").

- Activate the transmitters in the "Supervision list" whose current levels should be stored for reference levels.
- Store the levels of column "Level" for reference via menu item **Options > Level->Reference** or click on button .

SWITCHING ON () AND OFF () THE TRANSMITTER CONTROL INDIVIDUALLY:

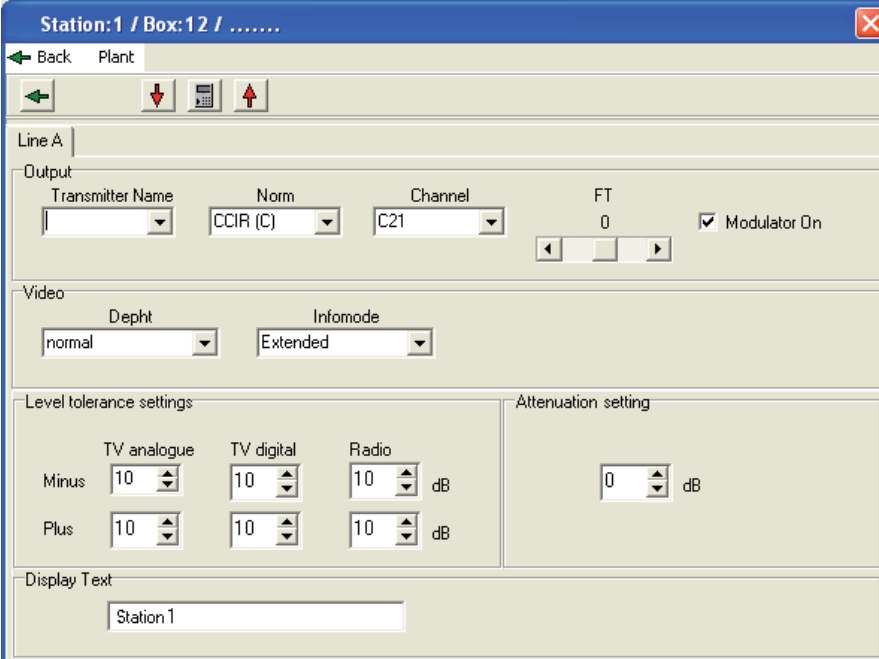
If transmitters are included in the "Supervision list" and reference levels are stored it does not mean that it even will be monitored. The control can be switched on and off individually for each transmitter.

- Activate one (or several) transmitter(s) in the "Supervision list".
Via menu item **Options > Switch control on** () or **Options > Switch control off** () you define which transmitters are to be monitored. In column "Control" of the "Supervision list" these settings are displayed (ON/OFF).

—> Analogue transmitters will be monitored for "level within the tolerance" and "Sync.", digital transmitters for "level within the tolerance", "locked" and "bit error", and FM transmitters for "level" and "malfunction of RDS data".

CASSETTE SETTINGS

- Select menu item **Edit > Cassette settings** or click on button .



Station: 1 / Box: 12 /

Back Plant

Line A

Output

Transmitter Name Norm Channel FT

CCIR (C) C21 0

☒ Modulator On

Video

Depth Infomode

normal Extended

Level tolerance settings

TV analogue TV digital Radio

Minus 10 10 10 dB

Plus 10 10 10 dB

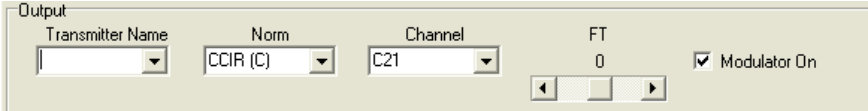
Attenuation setting

0 dB

Display Text

Station 1

CASSETTE SETTINGS – SECTION "OUTPUT":



Output

Transmitter Name Norm Channel FT

CCIR (C) C21 0

☒ Modulator On

- Enter the transmission parameters of the info channel and switch it on or off with check box "Modulator On".

CASSETTE SETTINGS – SECTION "VIDEO":

Video

Depth

normal

Infomode

Extended

Modulation "Depth":

The modulation depth can be decreased (-5%, -10%) if sound interferences dependent on the picture content occur.

Info channel "Infomode":

Via this info mode setting the informations to be transmitted can be selected. At display mode "**extended**" following transmitter data are displayed in the OSD menu "Info channel":

- At analogue TV channels:
Channel, name and HF level in dBµV.
- At digital TV channels:
Channel centre frequency in MHz, symbol rate in MSymbols/second, BER (Bit error rate) and HF level in dBµV.
- At FM programmes:
Frequency in MHz, RDS name, HF level in dBµV.

Kanal	Name	BER	dBµV
C 2	BR-3		63
C 3	ARD		62
C 4	ZDF		64
426,00	6,900 Ms 1	e-7	51
434,00	6,900 Ms 1	e-7	53
442,00	6,900 Ms 1	e-7	51
95,15	Bayern 3		62
104,60	Radio F		63
Station 1		Seite 1/6	

At display mode "**normal**" of the OSD menu "Info channel" the HF levels (dBµV) and the BER (Bit-Error-Rate) are not displayed, but the measuring for the monitoring is still done in the background.

Kanal	Name
C 2	BR-3
C 3	ARD
C 4	ZDF
426,00	6,900 Ms
434,00	6,900 Ms
442,00	6,900 Ms
95,15	Bayern 3
104,60	Radio F 63
Station 1	Seite 1/6

CASSETTE SETTINGS – SECTION "LEVEL TOLERANCE SETTINGS":

Level tolerance settings:

	TV analogue	TV digital	Radio	
Minus	10	10	10	dB
Plus	10	10	10	dB

- Adjust the level tolerance range of the monitored signals.

—> Exceeding the tolerances longer than the time frame set (page 65) results in an error message.

CASSETTE SETTINGS – SECTION "ATTENUATION SETTING":

Attenuation setting

0 dB

Herein attenuations inserted between the output of the head-end station and the input of the monitoring cassette can be entered in order to take it in consideration for the monitoring (offset).

—> Using the measuring output of a CSE 3312, enter the 20dB attenuation of the measuring output, in order to get the actual value of the stations output level.


- Enter a corresponding attenuation.

CASSETTE SETTINGS – SECTION "DISPLAY TEXT":

Display Text

Station 1

- Enter the text which should be displayed in the footer of the info channel.


—> **The changes are only effective when they were sent to the plant** .

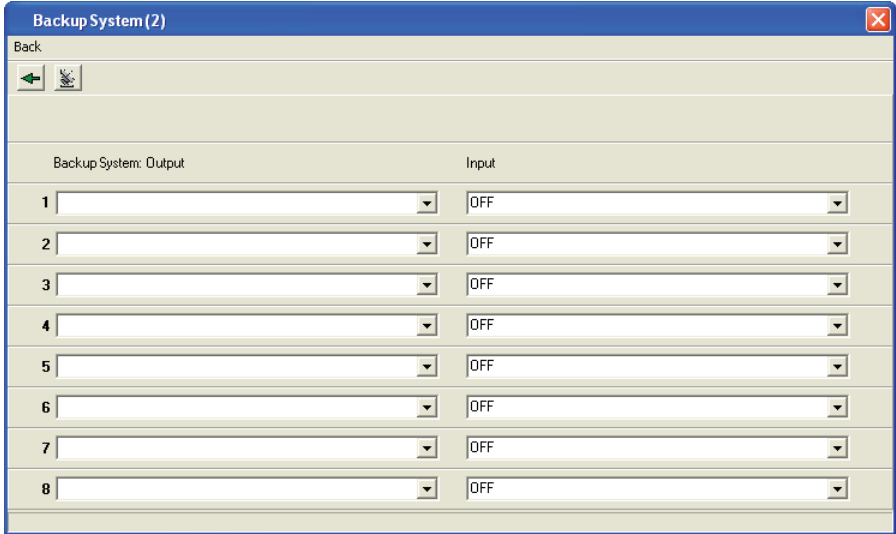
Close the menu:

- Close the menu via the menu item **Back** or buttons  / .

BACKUP SYSTEM

Via this menu a connected backup system can be configured.


- Select CCB 16/8 in the left window (tree structure) and click to button  or...
- Select menu item **Edit > Backup System**.

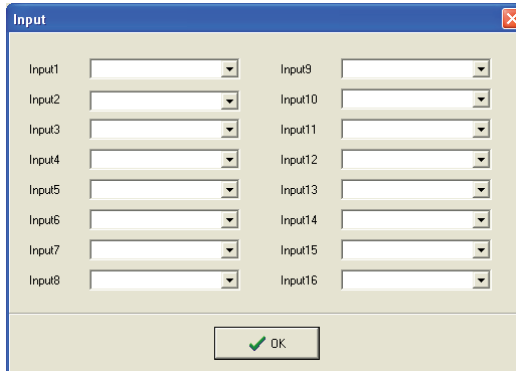


The dialog box titled "Backup System (2)" has a "Back" button with a left arrow icon. Below it is a table with two columns: "Backup System: Output" and "Input". The table contains 8 rows, each with a number in the first column, a dropdown menu in the second column, and a dropdown menu in the third column. All "Input" dropdowns are currently set to "OFF".

	Backup System: Output	Input
1	<input type="text"/>	OFF
2	<input type="text"/>	OFF
3	<input type="text"/>	OFF
4	<input type="text"/>	OFF
5	<input type="text"/>	OFF
6	<input type="text"/>	OFF
7	<input type="text"/>	OFF
8	<input type="text"/>	OFF

INPUT ASSIGNMENT:

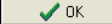
- Click to button .



The dialog box titled "Input" contains two columns of dropdown menus. The left column is labeled "Input1" through "Input8" and the right column is labeled "Input9" through "Input16". All dropdown menus are currently empty. At the bottom right, there is a button with a green checkmark and the text "OK".

Input1	<input type="text"/>	Input9	<input type="text"/>
Input2	<input type="text"/>	Input10	<input type="text"/>
Input3	<input type="text"/>	Input11	<input type="text"/>
Input4	<input type="text"/>	Input12	<input type="text"/>
Input5	<input type="text"/>	Input13	<input type="text"/>
Input6	<input type="text"/>	Input14	<input type="text"/>
Input7	<input type="text"/>	Input15	<input type="text"/>
Input8	<input type="text"/>	Input16	<input type="text"/>

OK

- Enter the connected satellite layers for the corresponding inputs of the back-up system (e.g. astra, astra vl, eutel hl etc.).
- Confirm the settings with button .

BACKUP SYSTEM: OUTPUT

Herein the present backup cassettes will be entered.

- Select the connected backup cassettes for the corresponding outputs of the backup system (e.g. Station 2/Box:1/Linie:A/CCS-2 1001/DVB-S2 to COFDM).

BACKUP SYSTEM: INPUT

Herein the needed input (SAT layer) will be assigned to the backup cassettes.

- In case of a cassettes malfunction assign the needed input to the corresponding backup cassette.

	Backup System: Output	Input
1	Station:2 /Box:1 /Linie:A /CCS-2 1001/DVB-S2 to COFDM	1 [Astra 1KR]
2	Station:2 /Box:1 /Linie:B /CCS-2 1001/DVB-S2 to COFDM	OFF
3	Station:2 /Box:2 /Linie:A /CCS-2 1001/DVB-S2 to COFDM	OFF
4	Station:2 /Box:2 /Linie:B /CCS-2 1001/DVB-S2 to COFDM	OFF
5	Station:2 /Box:3 /Linie:B /CCS-2 1001/DVB-S2 to COFDM	OFF
6	Station:2 /Box:3 /Linie:B /CCS-2 1001/DVB-S2 to COFDM	OFF
7	Station:2 /Box:4 /Linie:B /CCS-2 1001/DVB-S2 to COFDM	OFF
8	Station:2 /Box:4 /Linie:B /CCS-2 1001/DVB-S2 to COFDM	OFF

—> The changes are only effective when they were sent to the plant .

Close the menu:

- Close the menu via the menu item **Back** or buttons /

MTP PROGRAM

This function is only needed for a few specific applications/cassettes. Its handling is described in the assembly instruction of the corresponding cassettes.

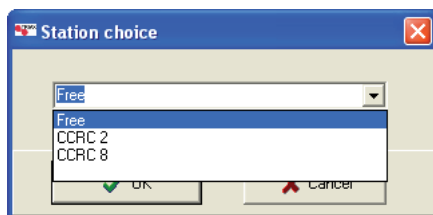
EDIT SELECTION

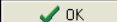
Via this menu a component (plant/station/cassette) selected in the left window (tree structure) can be changed resp. new added virtually (e.g for preconfiguration, planning etc.).

- Activate the component to be changed in the left window (tree structure).
- Select menu item **Edit > Edit selection**.

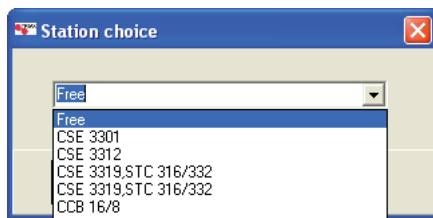
—> This function can also be selected by the context menu (right mouse button).


COMPONENT PLANT:

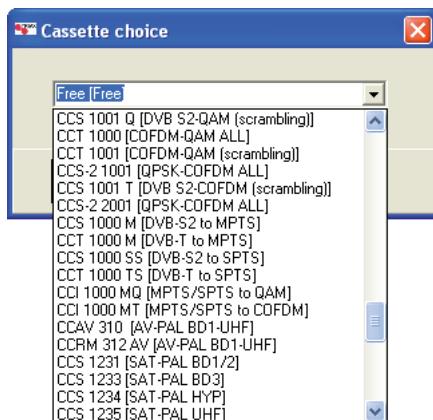


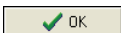
- Select the desired management unit.
- Confirm the selection with button .

COMPONENT STATION:



- Select the desired station.
- Confirm the selection with button .

COMPONENT CASSETTE:

- Select the desired cassette.
- Confirm the selection with button .

6.5 MENU OPTIONS

Several tools are pooled in menu "Options:

Options

Monitoring cassette ▶

Management unit ▶

Timer ▶



Key

IPS1

MONITORING CASSETTE

LEVEL INDICATION:

- Select menu item **Options > Monitoring cassette > Level indication**.

—> If no connection to the plant is activated, menu "connection settings" appears, in order to activate a connection.

Level display

← Back

Channel	Transmitter...	TV/Radio	QAM	Symbol rate	Level	Refer...	Station	Box
C 6		TV anal...			92	92	1	11 B
C 21		TV anal...			78	79	1	12 A
306,000 MHz	6,900 Ms	TV digital	64	6,900 Ms/s	80	78	1	7 A
834,000 MHz	6,900 Ms	TV digital	256	6,900 Ms/s	78	76	1	4 B
850,000 MHz	6,900 Ms	TV digital	64	6,900 Ms/s	77	74	1	5 A
858,000 MHz	6,900 Ms	TV digital	256	6,900 Ms/s	81	80	1	5 B

Messwerte

TV analogue / Channel: C 6

Level: 92 dBuV

Sync: OK

- Select a transmitter in the list in order to display its level.

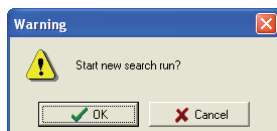
—> Indications are level and sync. at analogous transmitters, level and bit error rate (BER) at digital transmitters and the level at FM transmitters.

START SEARCH RUN:

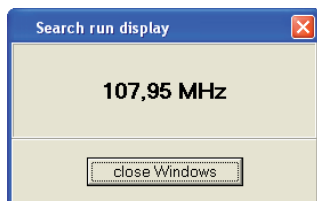
If the configuration of the plant was changed, using this function a station search of the monitoring cassette can be started in order to find new stations for monitoring.


- Select menu item **Options > Monitoring cassette > Start search run.**

—> If no connection to the plant is activated, menu "connection settings" appears, in order to activate a connection.



- Start the station search with button .



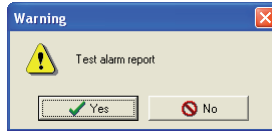
—> After that read in the new data from the monitoring cassette into the PC .

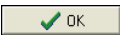
MANAGEMENT UNIT**TEST ALARM REPORT:**

A test alarm report will be sent according to the alarm settings done in menu "Plant settings" (page 61).

- Select menu item **Options > Management unit > Test alarm report.**

—> If no connection to the plant is activated, menu "connection settings" appears, in order to activate a connection.



- Confirm with button .

TIMER

TIME OFFSET:

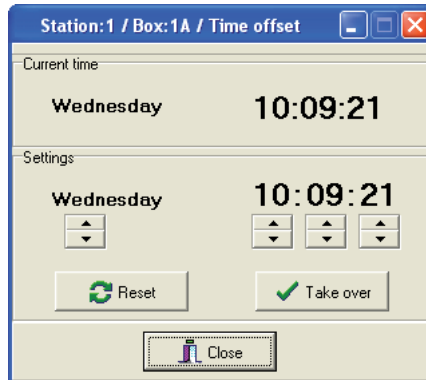
—> For this option a cassette suitable as timing circuit must be set in menu **Edit > Timer** (page 33).

In this menu a time offset (correction, time zone etc) can be entered for the time provided by the timing circuit. This offset is stored in the management unit.

—> If the time provided from the timing circuit does not correspond to the local time, this setting is important for a correct timer function.



- Select menu item **Options > Timer > Time offset**.

—> If no connection to the plant is activated, menu "connection settings" appears, in order to activate a connection.




—> In section "Current time" the time provided by the timing circuit + the stored time offset is displayed.

Adjust a time offset:

- Adjust desired day and time using buttons .
- Store the time offset with button .

—> After that in section "Current time" the modified time is displayed.

Reset the time offset:

- Reset (delete) the stored time offset with button .

—> After that in section "Current time" the time **without** time offset is displayed.

- Close the menu with button .

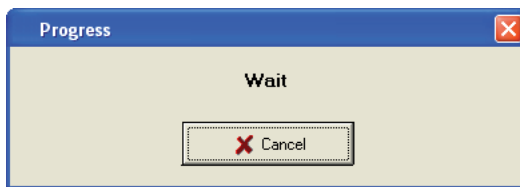
RESTART TIMER:

This option starts the timer programmed in menu **Edit > Timer**.

—> If for example due to maintenance work the switching states were modified or new timer are set, the switching states will be brought into the correct order by this option.

- Select menu item **Options > Timer > Restart Timer**.

—> If no connection to the plant is activated, menu "connection settings" appears, in order to activate a connection.

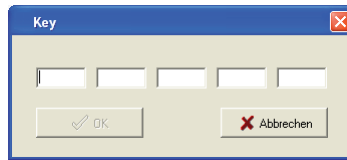


—> The target state at the current time is set.

KEY

In this menu the current key code can be replaced.

- Select menu item **Options > Key**.



- Enter the new key.

—> If the key code is incorrect the programme does not start again.

IPS1

In this menu you can start a browser e.g. to get access to the HTML user interfaces of connected components.

—> Observe the sample configuration in Annex A (Page 89)

6.6 MENU LANGUAGE

In menu "Language" select the menu languages German, English, French or Spanish.




6.7 MENU HELP

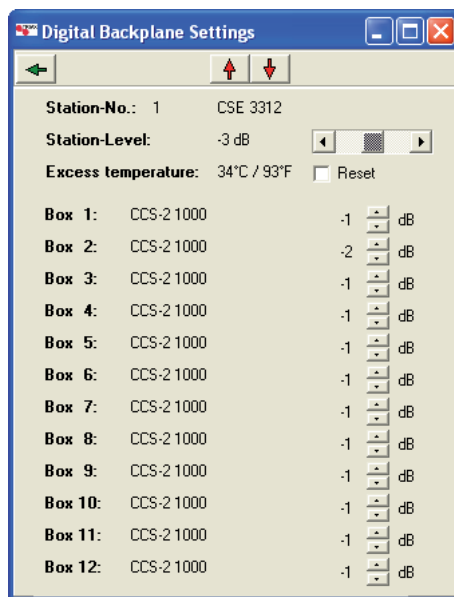
In Menu "Help" you can open the help file via menu item **Help > Help**, or get information about the software version via menu item **Help > Info**.








The output level of stations and cassettes equipped with an electronic level controller can be set via this menu. The stored maximum temperature can be reset.

- > If button  becomes "active" after selecting a station in the left window (tree structure) of the CCRS 1000 the station is equipped with an electronic level controller.
Access for this menu is only possible via this button.
- > The setting of the output level of cassettes is possible from the control units software version V44 (BE-Remote) on.

- Click to button .



- Adjust the output level of the station via buttons    to the desired value (0...-6dB).
- Adjust the output level of the corresponding cassette via the corresponding buttons  to the desired value (-25...0dB).
- Activate the check box "Reset" in order to reset the stored temperature.
- Send the setting to the station .

- > Using button  the current values of the plant can be read out.



As often repeated:

All modifications/configurations be done with the CCRS 1000 first are only be hold in the RAM (random access memory) of the PC. To get "active" the configuration data must be sent to the plant.

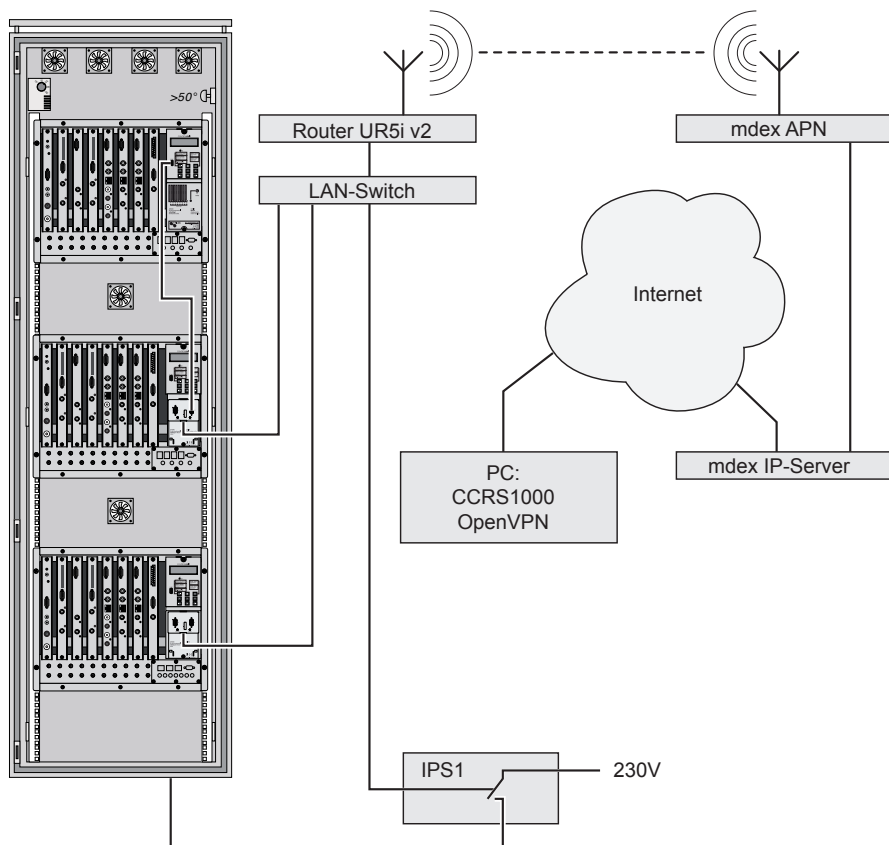
—> So it is often necessary to send modifications to the plant and after that to read the modified settings into the programme again (in order - for example - to measure modified data rates or to make modified filter settings available for transmitting to other cassettes).

ANNEX A

A1 CONNECTION PC → ETHERNET → UMTS-VPN → MANAGEMENT SYSTEM

Assembling and configuration of a plant with included management system and UMTS router for remote control via a PC with Internet connection.

SAMPLE CONFIGURATION WITH TESTED COMPONENTS



COMPONENTS USED

- 3 x CSE 8-16 head-end station
 - 2 x CCRC 2 management system
 - CCRS 1000 remote control software
 - LAN switch (if the switch should also be used for IPTV data streams, a layer 3 switch, which is able to process multicast streams, is needed)
 - UMTS - HSUPA VPN Router UR5i v2
 - IP power switch IPS1: LAN controlled 230 VAC switch of the ELV company (www.elv.com - order no. 83514).
 - mdexfixed.IP of the mdex GmbH (www.mdex.de)
- APN: Access Point Name; the name of the external access point of a GPRS network. Normally the standard APNs of the network provider are configured in mobile handsets. In order to use the mdexfixed.IP the standard APN must be changed to the mdex APN.
- OpenVPN: A software to create a virtual private network (VPN) via a SSL encrypted connection. The OpenSSL programme libraries are used for the encryption. OpenVPN uses UDP or IP protocol for transport. OpenVPN is a free software and supports several operating systems e.g. Linux, Windows 2000/XP etc.

FUNCTIONAL PRINCIPLE

An UMTS - HSUPA VPN Router which can be accessed via a mobile phone network is connected via LAN to the management system of the plant. In order to get access via mobile phone network the router must have a static IP address which can be purchased e.g. from the "mdex GMBH" (mdexfixed.IP). mdex offers miscellaneous solutions for several mobile phone networks and also acts as a network provider by offering the "mdexsim". The mdex APN must be set in the router.

Using the CCRS 1000 software on a PC with Internet access it is possible to get access to the plant via the mdex network.

Via the IP power switch IPS1 suitable components can be switched on and off via remote (for example the operating voltage of the head-end station).

CONFIGURATION SEQUENCE

- **First you need a "mdexfixed.IP"**, which can be purchased from mdex (www.mdex.de).

You will get a confirmation mail from mdex containing all needed data.

For this example:

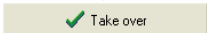
mdex access details			
	User name	Password	Product description
Internet access point (OpenVPN)	i00xxxxa	abc	fixed.IP for OpenVPN
Mobile access point	m00xxxxb@mdex.de	def	fixed.IP via Vodafone APN: cda.vodafone.de
web.direct access point	m00xxxxc	ghi	
Device addresses			
	IP address	Access type	Host name
fixed.IP via OpenVPN	172.21.88.xxx	Internet access	i00xxxxa.maxmuster-mann.mdex.de
fixed.IP via Vodafone	172.20.207.xxx	Mobil access	m00xxxxc.maxmuster-mann.mdex.de

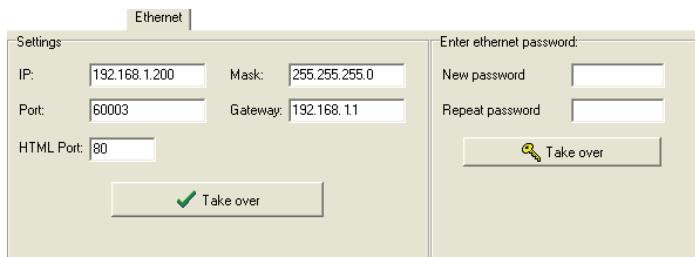
- **Assign the IP addresses** for the components at receiving plant side.

For this example:

Component	IP address	Port
IP address router	192.168.1.1	
IP address management system	192.168.1.200	60003
IP address IP power switch IPS1	192.168.1.201	80

- **Configure the Ethernet settings for CCRC 2** as described in the assembly instructions of CCRC2.

Call up menu **Edit > Plant settings > Ethernet** (Page 63), enter the settings required for the network (the plant is installed) and click to button  in order to send the settings to the management system.



—> The specified values relate to this example.

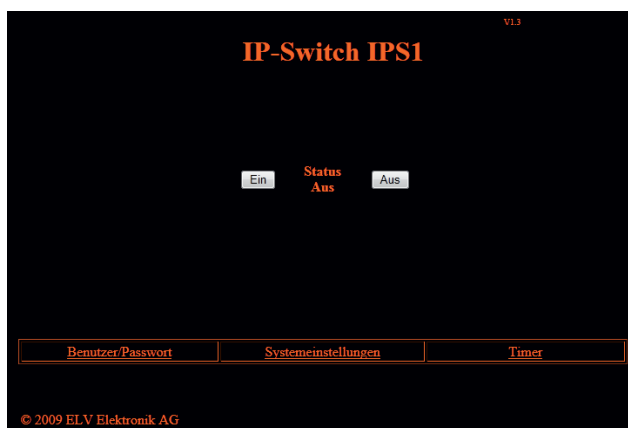
- **Configure the IP power switch IPS1.**

By default IPS1 is set to the static IP address 192.168.1.100, Subnetmask 255.255.0.0, Gateway 192.168.1.1, Port 80.

Adjust your PC to a static IP address in the address range of the IPS1 (e.g. 192.168.1.2, Subnetmask 255.255.0.0).

Connect the PC with the IPS1 via a LAN cable.

Call up the web interface (only in German) of the IPS1 via a browser (<http://192.168.1.100>).



Click to button  (system settings).

Systemeinstellungen

Auf dieser Seite können Sie die Systemeinstellungen des IPS 1 verändern und an Ihre Netzwerkparameter anpassen. Sie können zudem den Hostnamen sowie die Hintergrund- und Textfarbe ändern. Die MAC-Adresse des IPS 1 wird ebenfalls angezeigt.

Sollten Sie die IP-Adresse ändern, müssen Sie, nachdem die neue Adresse übernommen wurde, ebenfalls die IP-Adresse in der Adresszeile ändern, um wieder Zugriff auf den IPS 1 zu erhalten. Beachten Sie, dass falsche Eingaben dazu führen können, dass Sie keinen Zugriff mehr auf den IPS 1 erhalten.

Alle Änderungen auf dieser Seite werden erst nach einem Klick auf die Schaltfläche "Übernehmen" übernommen. Dabei werden die Eingaben überprüft und nur akzeptiert, wenn die Eingaben gültig sind. Im Fehlerfall wird eine Warnung inklusive der fehlerhaften Eingabe erzeugt. Mit der Schaltfläche "Verwerfen", werden alle Änderungen rückgängig gemacht, die noch nicht übernommen worden sind.

☐ Zuweisung durch den DHCP-Server
☒ manuelle Konfiguration

IP-Adresse:
 Subnetzmaske:
 Gateway:
 Primärer DNS Server:
 Sekundärer DNS Server:
 MAC-Adresse:
 Host Name:
 Hintergrundfarbe:
 Textfarbe:

Select "manuelle Konfiguration", enter the required settings click to button (apply).

—> The specified values relate to this example.
 "local" IP address 192.168.1.201
 Subnetmask 255.255.255.0
 Gateway 192.168.1.1 ("local" IP address of the router)


Click to button in order to return to the main menu.

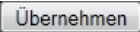
Click to button (user password).

Benutzer/Passwort ändern

Auf dieser Seite können Sie das Passwort und den Usernamen ändern. Mit einem Klick auf die "Übernehmen"- Schaltfläche wird das Passwort geändert. Sollten die beiden Passworteingaben nicht übereinstimmen, erscheint eine Warnung und die Eingaben werden zurückgesetzt.

Passwortüberprüfung: ☒ Ein ☐ Aus
 Benutzername:
 Passwort:
 Passwort wiederholen:

Enter a user name (Benutzername) and a password (Passwort) and switch on the password request  **Ein**, in order to prevent unauthorized access to the IPS1.

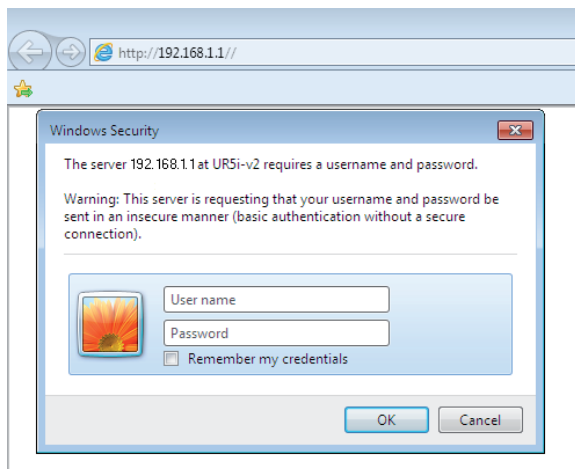
Click to button  (apply).

- **Configure the UMTS router UR5i v2.**

By default UR5i is set to the static IP address 192.168.1.1, Subnetmask 255.255.255.0.

Adjust your PC to a static IP address in the address range of the UR5i (e.g. 192.168.1.2, Subnetmask 255.255.255.0).

Call up the web interface of the UR5i via a browser (<http://192.168.1.1>).



Enter "User name" (default is "root") and password (default is "root") for login.

—> We recommend to change the password.

LAN configuration:

Limit the address range of the IP pool of the DHCP server so, that the static IP addresses of the management system (192.168.1.200) and the IPS1 (192.168.1.201) are outside the DHCP range (menu LAN configuration, "IP Pool Start"/"IP Pool End")

The screenshot shows the web interface of a UMTS router UR5i v2. The browser address bar indicates the URL is http://172.20.207.0/eth.cgi. The page title is "UMTS router UR5i v2".

The interface has a sidebar menu on the left with the following items:

- Status
- Network
 - DHCP
 - UMTS/GPRS
 - IPsec
 - DynDNS
 - System Log
- Configuration**
- LAN
 - VRRP
 - UMTS/GPRS
 - Firewall
 - NAT
 - OpenVPN
 - IPsec
 - GRE
 - L2TP
 - DynDNS
 - NTP
 - SNMP
 - SNTP
 - SMS
 - Expansion Port
 - USB Port
 - Startup Script
 - Up/Down Script
 - Automatic Update
- Customization
- User Modules
- Administration**
 - Change Profile

The main content area is titled "LAN Configuration". It contains several sections:

- DHCP client:** Primary LAN is set to "disabled" and Secondary LAN is also set to "disabled".
- IP Address:** Set to "192.168.1.1".
- Subnet Mask:** Set to "255.255.255.0".
- Media Type:** Both Primary and Secondary LAN are set to "auto-negotiation".
- Default Gateway:** Empty field.
- DNS Server:** Empty field.
- Enable dynamic DHCP leases:** Checked box.
- IP Pool Start:** Set to "192.168.1.2".
- IP Pool End:** Set to "192.168.1.80".
- Lease Time:** Set to "600" seconds.
- Enable static DHCP leases:** Unchecked box.
- MAC Address / IP Address table:** A table with two columns, MAC Address and IP Address, containing five rows of empty fields.

An "Apply" button is located at the bottom left of the configuration area.

Confirm the settings with button **Apply**.

NAT configuration:

By default the management system is set to port 60002, IPS1 can exclusively be accessed via port 80.

Enter the following port forwardings in menu "NAT":

The screenshot shows the web interface of a UMTS router UR5i v2. The browser address bar shows the URL `http://172.20.207.0/nat.cgi`. The page title is "UMTS router UR5i v2". On the left, there is a sidebar menu with "Status" selected. The main content area is titled "NAT Configuration" and contains a table with the following data:

Public Port	Private Port	Type	Server IP Address
1000	60002	TCP	192.168.1.200
1001	80	TCP	192.168.1.201

In column "Public Port" enter the ports needed to get "external" access to the Router (e.g. port 1000 for the management system, port 1001 for IPS1). In column "Private Port" enter the ports, to which the "Public Ports" must be forwarded (e.g. Port 60002 for the management system, port 80 for IPS1).

—> Herein for the management system you have to enter the port, which you have entered in the Ethernet settings (page 63).

In column "Server IP Address" enter the corresponding "internal" IP addresses (e.g. 182.168.1.200 for the management system, 192.168.1.201 for IPS1).

- Herein you have to enter the IP addresses which you have assigned at the beginning of the configuration (page 88).
- Using `http://172.20.207.0:1001` ("public" IP address of the routers : port for the port forwarding to the "internal" IP address 192.168.1.201) e.g. you can get "external" access to the browser user interface of the IPS1.

Confirm the settings with button **Apply**.

UMTS/GPRS configuration:

In menu "UMTS/GPRS Configuration" enter the APN mobile access data from mdex as well as the pin of the SIM card of the router:

UMTS router UR5i v2

UMTS/GPRS Configuration

☒ Create PPP connection

Primary SIM card	Secondary SIM card
APN *	
Username *	
Password *	
Authentication	PAP or CHAP
IP Address *	
Phone Number *	
Operator *	
Network Type	automatic selection
PIN *	
MRU	1500 bytes
MTU	1500 bytes

☒ Get DNS addresses from operator

☒ Check PPP connection (necessary for uninterrupted operation)

Ping IP Address:

Ping Interval: sec

☒ Enable traffic monitoring

Data Limit: MB

Warning Threshold: %

Announcement Start:

- IF NO PIN, or a wrong PIN is entered, the SIM card will be blocked when trying to establish a connection.

Confirm the settings with button **Apply**.

- Connect the management system and the IPS1 to the UR5i router via LAN cables.


- **Install the OpenVPN client on the PC, from which you would like to remote control the plant.**

Together with the access data from mdex you will get a link, to download the install file of the VPN client.


Start the file and follow the instructions of the "OpenVPN Setup Wizard".

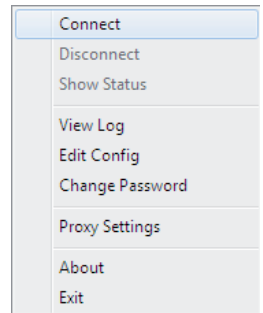
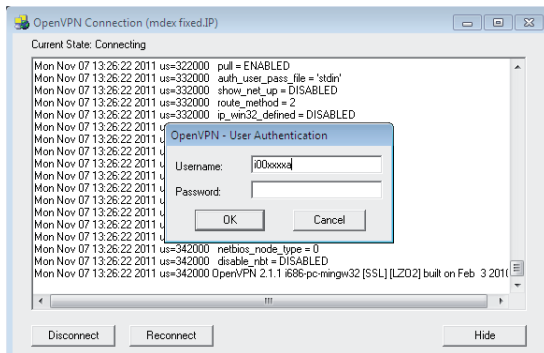
After a successful installation start **All Programs > OpenVPN > OpenVPN GUI** with administrator privileges.

—> In some operating system you have to start OpenVPN GUI with administrator privileges otherwise the routing to the management system resp. IPS1 does not work.


—>  is shown in the information section of the task bar.

Right click the symbol and select "Connect".

 is shown in the information section of the task bar, until the connection is established.



Enter the mdex OpenVPN access data.

—> If the connection is established,  is shown in the information section of the task bar.

—> If the connection establishment will not work, check the "Proxy Settings" in the context menu - if necessary contact your system administrator.

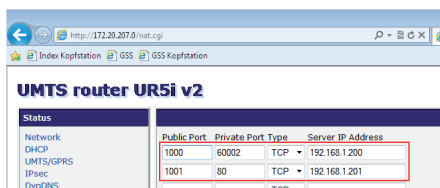
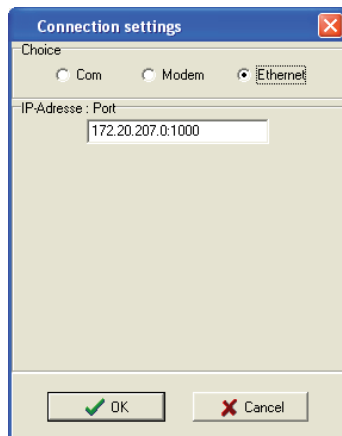
- **Remote control via CCRS 1000.**

The OpenVPN connection to the UR5i must be active (🟢).

Start the CCRS 1000.

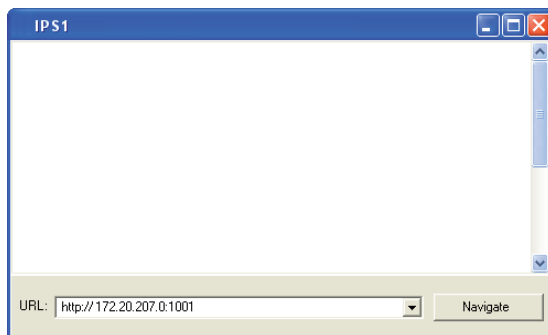
Click on button  (establish a connection).


Select "Ethernet" and enter the IP address, which you got from mdex for the mobile access (172.20.207.0 in the example) and – separated by a colon – the "Public Port", which you entered for the management system during configuration of the UR5i (1000 in the example).



Remote switching of IPS1 via CCRS 1000

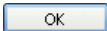
Open the internal browser via **Options > IPS1** by which you can get access e.g. to the web interface of the IPS1.

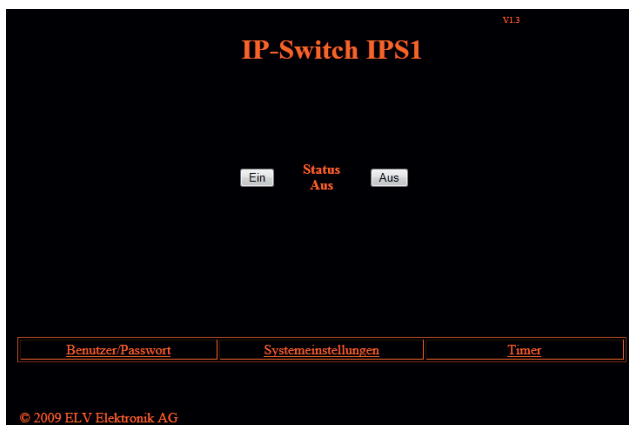




Enter the IP address, which you got from mdex for the mobile access (172.20.207.0 in the example) and – separated by a colon – the "Public Port", which you entered for the IPS1 during configuration of the UR5i (1001 in the example), and click to button .

The connection to IPS1 will be established.



Enter the access data which you assigned during configuration of the IPS1 and click to button .



Via buttons  (on) and  (off) you can change the switching status of IPS1.

—> The current switching status is shown between the two buttons.

A

Activate connection 29
 Activation Code 12
 Add a new PID 60
 Adjust the output level 84
 Administrate the configuration data 21
 Alarm E-Mail 67
 Alarm Modem 66
 Alarm report 80
 Alarm settings 65
 Alarm SNMP-Traps 68
 Attenuation setting 74
 Automatic LCN assignment 35

B

Backup 23
 Backup System 75
 Basic configuration of the plant 14
 Basic information 21

C

Cassette 78
 Close plant 23
 Communication programme <=> plant 25
 COM port 17
 Configuration 14
 Configuration data 21
 Connection settings 17, 18, 19
 Connection to the plant 16

- Connection via COM port 17
- Connection via Ethernet 19
 - Ethernet => UMTS-VPN 86
- Connection via modem 18
- In situ connection 17
- Requirements 16
- Sample configuration 86

 Controlling the plant 20
 Control unit 28
 Create NIT 33

D

Data rate measurement 58
 Data settings 29
 Deactivate connection 29
 Delete the log file 57
 Delete timer 49
 Description 10
 Detailed information 21
 Direct connection 14
 Display Text 74
 DNS account 19

E

Edit 29, 33, 39, 48, 49, 50, 52, 61, 75, 77
 Edit a timer 49
 Edit NIT 39
 Edit selection 49, 77
 E-Mail 67
 English 83
 Error message 66, 67, 68
 Ethernet 10, 19, 63
 Ethernet password 65
 Exit 25
 Export 25
 Export a Service (LCN) list 37
 Export the log file 57

F

"Filter ON" check box 54
 Filter settings 53
 Final Hints 85
 French 83

G

General information 9
 German 83
 GSM mobile phone 10
 GSM modem 15, 63

H

Hardware 11

Help 16, 83

Hints 85

I

Infomode 73

Information 9

In situ operation 14

Installing the software on a PC 12

IPS1 83

K

Key 83

Key code 16, 83

Key Code 12

L

Language 16, 83

LCN 34

LCN HD 35

Level tolerance settings 74

License Agreement 6

Limitation of Liability 7

Logbook 57

Log file 57

Logical Channel Number 34

M

Management unit 80

Manual LCN assignment 35

Maximum temperature 84

Meaning of the used symbols 9

Menu Edit 29

Backup System 75

Copy NIT 46

Create NIT 33

Data settings 29

Edit NIT 39

Edit selection 77

Monitoring cassette 69

MTP Function 52

MTP Program 77

Plant settings 61

Spectrum I/Q 51

Timer 48

Menu File 21

Close plant 23

Exit 25

Export 25

New plant 22

Open plant 22

Print plant 24

Save plant 23

Save plant as... 23

Menu Help 83

Menu Language 83

Menu Options 79

IPS1 83

Key 83

Management unit 80

Monitoring cassette 79

Timer 81

Menu Plant 25

Activate / Deactivate connection 29

Control unit 28

Read data 26

Reset 28

Send data 27

Modem 10, 18, 63, 66

Monitoring cassette 69, 79

MTP Function 52

MTP Program 77

N

New plant 22

New Timer 49

NIT (Network Information Table)

Copy NIT 46

Create NIT 33

Edit NIT 39

Export NIT (without LCN) 45

Save NIT (LCN included) 38, 44

No Warranty. 7

Ⓞ

Open a saved LCN list 37
Open plant 22
Options 79, 80, 81, 82, 83
Output level 84

P

Packing contents 9
Password 62, 64
PC system requirements 10
PID 60
PIDs can be dropped 54
Pin number 63
Planning 77
Plant 77
Plant configuration 29
Plant settings 61
Port forwarding 19
Preconfiguration 77
Print plant 24
Print preview 24
Print the log file 57

R

Read data 26
Read data (configuration) 20
Read stream information 59
Read the current log file 57
Reference level 71
Remap a PID 60
Remote control 15
 via management system 15
 Ethernet UMTS-VPN 86
 via modem without management system 15
Required hardware 11
Reset 28, 84
Reset filter settings 58
Reset the stored temperature 84
Restart Timer 82

S

Save a LCN list 37
Save plant 23
Save plant as... 23
Save the NIT 38
Send data 27
Service Flag 36
SNMP Inform Request 68
Software 12
Software License Agreement 6
Software updates 10
Sort timer 50
Spanish 83
Spectral position 51
Spectrum I/Q 51
Station 77
Station configuration 84
Station data 62
Supervision list 21, 70, 71
System information menu 28
System requirements 10

T

Test alarm report 80
Time controlled 48
Time offset 81
Timer 48, 81
Timing circuit 48

V

Variant 23
Virtual control unit 28
Visible Service Flag 36

